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NOTE
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MILITARY REPORT
ON
SINKIANG
(Chinese Turkestan)
1929

GENERAL STAFF, INDIA

Catalogue
No. C. C. 111.



Case
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CALCUTTA
GOVERNMENT OF INDIA PRESS
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MILITARY REPORT ON SINKIANG (CHINESE TURKESTAN), 1929.

ERRATUM.

Page 30.—Delete from “At present” in line 12 to “1925” in line 31.

Page 161.—“Silk”, line 3, delete from “but” to end of paragraph and substitute “These are not used for sericulture in Karghalik or Kashgar, but in Yarkand a considerable amount of coloured silk is manufactured.”

Page 183.—Line 21, after “wool” add “and sheep intestines.” Add the following as a new paragraph “Formerly a large trade was carried on with Tientsin in sheep intestines. Owing to the difficulties of the route and the presence of bandits very little is now exported to the east. During 1929, 389 maunds of sheep intestines, valued at Rs. 1,55,700, were exported to India, *via* the Karakoram and Chitral routes.”

Page 183.—“Annual Imports and Exports.” after “1925” add—

		Imports. Rs.	Exports. Rs.
1926	. . .	23,98,254	32,81,464
1927	. . .	11,86,848	28,14,565
1928	. . .	9,25,129	10,90,142
1929	. . .	9,54,354	16,43,710

Page 186.—Line 14, after “Headquarters Kashgar” add “The present (1930) strength in Kashgar area is approximately as follows :—

Kashgar New City—

Infantry	. . . . .	1,000
Cavalry	. . . . .	300
Artillery	. . . . .	2 field guns. 4 light guns.

There are also about 550 troops (mostly cavalry) in the various frontier posts under New City.

Kashgar Old City—

Infantry	. . . . .	250
Cavalry	. . . . .	200

There are also a hundred cavalry in Opal which is under Kashgar Old City.”

Page 186.—Line 15, *delete* from "The Chinese forces" to "is not known" in line 18.

Page 186.—Last paragraph "Personnel", *delete* the whole paragraph and *substitute* "Nearly all the Kashgar troops were locally recruited. Lately (1930), however, these have been discharged and Kalmaks enlisted in their place. The Kalmaks come from Ili and are of a considerably higher standard than the locally recruited troops."

Page 188.—Second paragraph "Dress" *add* at end "Generally speaking, uniforms have been improved since 1929."

Page 189.—First paragraph, "Pay", *delete* and *substitute* "The pay of the infantry in the Kashgar area varies between 4.2 and 4.5 taels per month. In addition to this they get 58 pounds of atta and 180 pounds of wood per month and are supposed to get two free issues of uniform per year. This is not always given and in any case is of very poor material. The pay of cavalry varies between 6.2 and 7.3 taels per month and horses are supposed to get 125 pounds of Indian corn and 180 pounds of bhoosa a month."

Page 191.—Line 14, after "Posts" *add* "Note. In 1929 there were 420 troops at Tikinlik, just north of Lop Nor and 700 at Charkhlik. These troops are composed of Chinese, Turki and Mongols. It is not known whether they are regular or militia or under which district they are. In 1925 there were also 500 infantry and 200 cavalry in the Goma-Sanju area. The infantry were locally recruited men, and the cavalry, Kalmaks from Ili."

Page 201.—Last paragraph, "Taoyins", *for* "Taoyins" *substitute* "Hsing-cheng-changs." *Delete* lines 1 and 2 of this paragraph and *substitute* "The Hsing-cheng-chang (formerly known as Fen-hsun Tao, Taotai or Taoyin, and at the beginning of the Republican regime as Kuan-cha-shih)."

Page 231.—Line 28, *delete* from "By an informal" to "telegraph charges" in line 36, and *substitute* "Both cypher and *en-clair* messages are transmitted from H. B. M.'s Consul General to Peshawar at the rate of 21 annas per word. A limited number of private messages for approved British subjects and others at Kashgar is also sent at a further cost of 1 anna per word. Wireless messages for Urumchi can also be sent at a cost of 6 annas per word, which is the same cost as is charged by the Chinese Telegraph Service."

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NOTES.

1. This report renders obsolete :—

Military Report on Hsin Chiang, 1914,

Military Report on the Taghdumbash Pamir, 1904,
which are to be destroyed.

2. Officers using this book are requested to send corrections,
additions and suggestions for improvement to :—

The Chief of the General Staff,

(M. O. 3—E)

Army Headquarters, Simla.

CORRECTIONS INSERTED.

Series No.	Date.	Series No.	Date.

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MILITARY REPORT

ON

SINKIANG.

CHAPTER I.

HISTORY.

1. *Original Inhabitants.*

It appears very probable that at the dawn of history Sinkiang (Chinese or Eastern Turkistan) was inhabited by an Aryan population, the ancestors of the present Slavonic and Teutonic races, and that a civilization not inferior to that of Bactriana had already developed in the region of the Tarim. Our knowledge, however, of the history of the region is very fragmentary until about the beginning of the Christian era. When the Huns (Hiong-nu) occupied West and East Mongolia in 177 B.C., they drove before them the Yue-chi (Yutes, Yetes, or Ghetes), who divided into two hordes, one of which invaded the valley of the Indus, while the other met the Sacae in Eastern Turkistan and drove them over the Thian Shan into the valley of the Ili. Thus, by the beginning of our era, the Tarim region had a mixed population of Aryans and Ural Altaians, some being settled agriculturists and others nomads. There were also independent cities, of which Khotan was the most important. One portion of the Aryans emigrated and settled in what is now the Wakhan district of Afghanistan (on the Pamir Plateau), the present language of which seems very old, dating anterior to the separation of the Vedic and Zend languages.

2. *Early Conquests.*

In the first century, the Chinese extended their rule westwards over Eastern Turkistan as far as Kashgar. But their dominion seems to have been merely nominal, for it was soon shaken off. By the end of the fifth century, the western parts

fell under the sway of the "White Huns," or Ephthalites, while the eastern parts were under Tangut (Thygun) dominion. The Chinese, however, still retained the region about Lop Nor.

Buddhism penetrated into the country at an early date; but in Eastern Turkistan there were also followers of Zoroastrianism, of Nestorian Christianity, and even of Manicheism. An active trade was carried on by means of numerous caravans. The civilization and political organization of the country were dominated by the Chinese, but were also influenced to some extent by Græco-Bactrian civilization. Buddhism spread rapidly in the south-west, and the study of Pali became widely diffused. Our information as to the state of the country from the second century to the first half of the seventh is slight, and is chiefly derived from the journeys of the Buddhist pilgrims Fa-hien in 399, Song-yun in 518, and Hwen-t'sang in 629. By this time Buddhism had reached its culminating point (in Khotan there were 100 monasteries and 5,000 monks, and the Indian sacred literature was widely diffused); but already there were tokens of its decay. Even then the eastern parts of the Tarim basin seem to have been growing less and less populous. To the east of Khotan, cities, which were prosperous when visited by Song-yun, had a century later fallen into ruins, while their inhabitants had migrated westwards. Legend has it that all the inhabitants of Go-lao-lo-tsia were buried in a sandstorm, and this seems to be but a poetical way of representing a phenomenon which was steadily going on in Eastern Turkistan.

Little is known about these regions during the seventh, eighth, and ninth centuries. In the seventh century the Tibetan king, Srong-btsan, with the help of the western Turks, subjugated the western part of the Tarim basin. During the following century the Mohammedans under Kotaiba, after several incursions into Western Turkistan, took Samarkand, Ferghana, Tashkent, and Khokand (712-13), and invaded Eastern Turkistan, penetrating as far as Turfan and China. The Chinese supremacy was not shaken by these invasions, but on the outbreak of internal disturbances in China, the Tibetans took possession of the western provinces of China, and intercepted the communications of the Chinese with Kashgaria, so that they were obliged to send their troops through the lands of the Hui-khe (Hoei-ke or Hoei-hu). In 790 the Tibetans were masters of Eastern Turkistan; but their rule was never strong, and towards the ninth century we find the

country under the Hoi-he. Who these people were is somewhat uncertain. According to Chinese documents they came from the Selenga, but most orientalist identify them with the Uigurs. In the opinion of M. Grigorieff, the Turks who succeeded the Chinese in the western parts of Eastern Turkistan were the Karluk Turks, who extended further south-west up to Kashmir, while the north-eastern parts of the Tarim region were subdued by the Uigurs. Soon, Mongolian hordes, the Kara-Kitais, entered Eastern Turkistan (eleventh century), and then penetrated into Western Turkistan, Khiva falling under their dominion.

During the following century Jenghiz Khan overran China, Turkistan, India, Persia, Russia, and Hungary. Kashgaria fell under his rule in 1220, though not without strenuous resistance followed by massacres. The Mongolian rule was, however, not very heavy, the Mongols merely exacting tribute. In fact, Kashgaria flourished under it, and the fanaticism of Islam was considerably abated. Women again acquired greater independence, and the religious toleration then established permitted the tenets of Christianity and Buddhism to be openly observed. This state of affairs lasted until the middle of the fourteenth century, when Kashgaria became united under Tugluk Timur Khan. He embraced Mohamedanism, and at the end of the fourteenth century the Mohammedan creed (Sunni doctrine) became predominant throughout Eastern Turkestan, supplanting Buddhism.

Tugluk Timur removed his capital from Aksu to Kashgar and annexed Bokhara. After his death the country was again thrown into disorder.

Towards the end of the fourteenth century Timur Lang (Tamerlane) laid waste the Thian Shan mountain system from Nor Zaisan to Kashgar, and a portion of the plains, putting the inhabitants to the sword in considerable numbers. The valley of the Yulduz (Konche) was the meeting place of his armies. Kashgaria was plundered and impoverished to such an extent that it has never since recovered from the blow.

The history of Kashgaria, from the fifteenth to the eighteenth century, affords an unbroken record of civil war between two religious parties, a struggle of which, now the Chinese, and now the neighbouring nomads, took advantage to seize the country for themselves.

During the fifteenth and sixteenth centuries Kashgaria was ruled by the numerous descendants of Tugluk Timur Khan. The administrations of his successors were famous only for their constant struggles for supremacy. Several times Kashgaria became divided into two independent states, with their capitals at Kashgar and Aksu respectively. The power of these Khans of Mongol race was not particularly lasting, for they were often vassals of the Uzbak Khans, who at this time reigned in Bokhara, Samarkand, Khokand, and Tashkent. The increase of the power of the Uzbak Khans in Western Turkistan usually betokened the decrease of the power of the Mongol Khans in Eastern Turkistan. The nomads of the Thian Shan always seized the opportunity of the outbreak of dissensions amongst the latter to interfere in the civil war in which they espoused the cause of one pretender or the other. Not content with plundering Kashgaria, they carried their raids as far as Khokand and Tashkent. These facts gave the Uzbaks the excuse for interfering in the affairs of Eastern Turkistan. Thus it was that, in the fifteenth century, under the pretext of punishing the nomad Mongol, they sent an army from Samarkand and occupied Kashgar.

Of all the descendants of Jenghiz Khan who ruled Kashgaria during the fifteenth and sixteenth centuries, the most famous was Sultan Said. He succeeded, not only in subjugating the nomads of the Northern Thian Shan, but in securing his frontier to the south and west on the side of Kashmir and Badakshan. Besides this, in 1531-33 he marched against Tibet with 5,000 men. The approach of winter obliged Sultan Said to halt, for he found it impossible to provision his army. He therefore sent his son Sikander, with 4,000 men, into winter quarters in Kashmir, and he himself remained with the remaining 1,000 in the neighbourhood of Balti. When summer came, Sultan Said once more joined his forces and continued his march to Lhasa, of which he took possession. On the return march to his capital he died not far from the Karakoram pass. His death was caused by the action of the rarefied atmosphere. This was a Ghazavat campaign, *i.e.*, a war against the infidel. It served as the commencement of endless wars entered into by the Khwajas, or leaders of two religious sects, which appeared at this time in Kashgaria.

Religious tolerance prevailed in Eastern Turkistan up to the seventeenth century : Buddhism, Mohammedanism, and Christianity were in vogue.

In the fourteenth and fifteenth centuries, Bokhara and Samarkand became centres of Mohammedan learning. In the fifteenth century, religious intolerance spread thence to Kashgaria, and the bigotry engendered bloody wars and economic paralysis which, coupled with her wars with China, brought Kashgaria to her present condition. Two sects were formed, known as the Ak Taulins (the white mountaineers) and Kara Taulins (the black mountaineers), divisions which still exist. The leaders of either spiritual party sought for political authority, and in pursuit of this object, they not only divided the country into two hostile camps, but from personal motives gave it first into the hands of the Zungars and then of the Chinese.

Appak Khwaja, head of the Ak Taulins, quarrelled with Khan Ismail, Jenghiz Khan's youngest son, the ruler of the country. He obtained the support of the Dalai Lama, the spiritual leader of all Asiatic Buddhists, and, from purely personal motives, yielded up his native land to the yoke of the Zungars, who seized Kashgaria in the year 1678, and held it for 78 years, until they gave place to the Chinese, who were likewise invited by Burkhan-ud-din, one of the White Mountain Khwajas.

The Zungars, or Kalmuks, are a Mongol race, and at that time dwelt in the valleys of the rivers Ili, Tekes, Kunges, and the two Yulduz.

Taking advantage of the fall of the Mongol dynasty of Han in China, the Zungars, in the beginning of the seventeenth century, concluded an alliance, at the head of which they placed Haldan Bokoshta, a Khan of the Tchöröss line. He incorporated in his dominions the Mongol branch of Olöts (Eleuths), and after that the Zungars for some time called themselves Olöts, and their Khans Oirats.

During the administration of the Khan Haldan Bokoshta, the Zungar sovereignty embraced the vast country bordered on the north by Siberia, on the east by the possessions of the Mongol Khan of the Khalkhas tribe, on the west by the Kirghiz steppes as far as Lake Balkash, and, lastly, on the south by Eastern Turkistan (*i.e.*, by the line of Kuchar, Karashar, and Turfan).

The Zungars (Kalmuks) were at this time divided into four tribes, *viz.*, the Tchöröss and Torguts, the Khoshuts and Durbats. This division has been preserved to the present.

day. Each tribe is ruled by its own Khan, subject to the authority of the Tchoross Khan, who is over all.

The period of the independent existence of the Zungar sovereignty was taken up with endless wars with the Chinese, but these wars did not hinder the Zungars from adding Eastern Turkistan as well as Tibet to their dominions. Subsequently, owing to the treachery of the Zungar leader Amursana and the existence of internal dissensions in Zungaria, the Chinese took possession of the above countries without opposition.

During the rule of the Tchoross Khans in Zungaria, and especially of Haldan Bokoshta, the country enjoyed great prosperity. Huge herds of camels, horses, and sheep covered the rich pastures in the valleys of the Eastern Thian Shan. The capital of the country was at Ili, whence the Khans governed their numerous nomad subjects.

Appak Khwaja, on the advice of the Dalai Lama of Lhasa, turned for aid to Haldan Bokoshta against Ismail, the Khan of Kashgar, the leader of the party opposed to his own. Khan Haldan immediately seized so favourable an opportunity for interference, and took possession of Kashgaria in 1678. He appointed Appak as his deputy, and returned to the river Ili, taking with him as prisoners the family of the Kashgar Khan. Haldan received a tribute of 400,000 tengas a month (about £60,000 a year). Appak Khwaja, seeking to free himself from the stigma attached to him as betrayer of his country, invited the brother of Khan Ismail to Kashgaria—a step which led both to his death and to bloody struggles between the Khwajas, until the Chinese, by taking possession of the country, put an end to civil war for a time (till 1825).

In 1720, Tsapan Raptan, who succeeded Haldan Bokoshta on the Zungar throne, assigned the administration of the six towns of Kashgaria to Daniel Khwaja. They were—Kashgar, Yangi Hisar, Yarkand (capital), Khotan, Aksu, and Kuchar. On his death his eldest son received Yarkand, his second Kashgar, his third Aksu, and his fourth Khotan.

On the death of Haldan Shirin in 1774, internal dissensions caused Amursana, a distant relation, and chief of one of the Kalmuk tribes, to declare himself and his tribe Chinese subjects, and a Chinese army being sent into the country, Amursana succeeded in persuading the chiefs of the Kalmuk tribes to go over to the Chinese.

3. *The Chinese Conquest.*

By intrigue with the Khwajas of Kashgaria, Amursana, after a bloody war, conducted by Burkhan-ud-din of the Ak Taulins who had acknowledged their fealty to China, was the means of adding Kashgaria to the Chinese dominions, and the latter were thus enabled to obtain in a few years, with very insignificant means, dominion over two vast states. The advantage obtained by the Chinese in the conquest of Kashgaria, and of Zungaria, consisted in the better security of the western frontiers of China; but, above all, in the opening up of markets for the sale of Chinese products, especially tea.

The Chinese, by not maintaining a sufficient army in these countries, held very insecure tenure of both, and in 1757 a rebellion broke out. A Chinese army reoccupied Zungaria without opposition, but in 1758 partial risings caused a terrible slaughter of Kalmuks, without respect of age or sex, and about 1,000,000 persons perished. The Zungar sovereignty now ceased to exist, and became parcelled out into seven circles. Of these, Ili, Tarbagatai, and Kurkara-usu formed the province of Ili. Barkul and Urumchi were added to the province of Kansu and the other two circles Kobdo and Uliasutai (the latter now part of Outer Mongolia) received a separate administration. On the site of the Zungar Khan's place of abode the Chinese built the town of Kuldja and introduced into the country military settlers of Mongol races, soldiers of the green standard from the frontiers of Manchuria—Sibs, Solons, and Daur. Criminals and vagabonds who possessed no lands in China also emigrated to the same place.

To this period in all probability may be ascribed the deportation by the Chinese of Mohammedans known under the name of Tungans or Dungans from their western provinces Kansu and Shensi into Zungaria.

In 1771 took place the immigration, unparalleled in modern times, of the Torgut Mongols. This tribe had settled, in the early part of the 17th century, on the steppes on the banks of the Volga in Russia. To escape Russian oppression, they migrated thence, to the number of some 40,000 families, and entered Zungaria in the neighbourhood of Ili, only to find that this province was now under the control of China. They were, therefore, forced to submit to Chinese rule, but were well treated and settled in the valleys of Ili, Tekes, Kunges, and Yulduz.

After the subjugation of Zungaria the Chinese at once turned their arms against Kashgaria with the object of quelling the rebellion, or, to speak more correctly, with the object of conquering the country, since the campaign of Burkhan-ud-din with a few hundred Chinese and Kalmuks, had not yet obliged the population to acknowledge Chinese supremacy. The result of the campaign was the reoccupation and thorough conquest (1758) of the country by the Chinese. The weak opposition displayed shows how meagre was the patriotism and bravery of its population, and also how dissatisfied was it with the rule of the Khwajas. It may be conjectured that the people who surrendered large towns to their enemies without resistance counted on the attainment of quiet in exchange for subjection to a foreign and hated dominion—a quiet such as the inhabitants of Kashgaria had been long without.

At this time (1758) Kashgaria consisted of 13 small towns and 16,000 villages and farm houses, besides the Alti-Shar. A census of Kashgaria showed that the population consisted of 50,000 to 60,000 families or about 375,000 persons, besides those who had taken flight with the Khwajas and 12,000 political offenders, condemned to exile at Ili who were employed in agricultural operations. During the reign of the last Khwaja, Kashgaria paid as tribute to the Zungars 20,000 ounces of silver and 2,564 batmans of bread.

Zungaria and Kashgaria were now united into a single military province known as Sinkiang (Hsin Chiang)—“The New Dominion,” under a governor, residing at Ili. The Tartar general, residing at Kuldja, had under him thirty-four ambans and 60,000 troops.

In the year 1756 a Chinese force had penetrated to the steppes of the Middle Horde. This was repeated in 1758 and 1760 and the Khans were compelled to acknowledge Chinese sovereignty.

After that, both the Khans of the Lesser Horde and the Elders of the Burut section of the Kara-Kirghiz, following the example of the Middle Horde, acknowledged their supremacy and were then obliged to pay a yearly tribute of one horse and one ox in every hundred, and one sheep in every thousand. In order to collect this tax the Chinese despatched yearly four detachments whose duty also it was to uphold Chinese influence in the Kirghiz country.

Two detachments were sent from Ili; one from Tarbagatai, and one from Kashgar. The Tarbagatai detachment united with one of the two from Ili in the valley of Ayaguz (between Kopal and Sergiopol). The second detachment from Ili then united with the detachment from Kashgar in the valley of Naryn. These detachments, having exchanged the tribute collected, returned homewards. Chinese merchants generally accompanied these forces in order to barter their wares for cattle, taking care, of course, to profit by the exchange with the semi-barbarous Kirghiz.

After the Kirghiz Khans, the Khokand rulers, Erdenya Bai and his heir, Narbuta Bai, declared themselves under the protectorate of the Bogdi Khan. Such swift successes caused the Chinese to be regarded as invincible, and made their name terrible throughout Central Asia.

Flushed with their successes, the Chinese seriously began to think of the conquest of Bokhara, Samarkand, and Tashkent. Tidings of the preparations for this campaign quickly reached the Central Asian Khans and made them forget their own quarrels in the fear of a common enemy. They, therefore, formed an alliance, which was joined also by Ahmed Shah, the ruler of Afghanistan.

To all Mohammedan potentates a summons went forth inviting them to participate in the *jehad*, or holy war, *i.e.*, a war for the faith against the infidel. An alliance was thus concluded in the year 1763, and in the same year the Afghan forces reached Khojent.

But the league which had been formed soon broke up. The Afghans were obliged to return to their own country, and the remaining chiefs considered themselves too weak to enter upon a struggle with such a powerful foe. The towns of Utch Turfan and Badakshan alone held out. The first, having trusted in the promised aid, rebelled, and its inhabitants were slain by the Chinese forces. With regard to Badakshan, that beautiful country was devastated by the Afghan forces, and its ruler, Sultan Shah, was executed, because he had not only refused to give refuge to those Khwajas who fled from Kashgaria during the siege of the town of Khotan by the Chinese (in the year 1758), but had also killed two of the Khwajas who were taken prisoners and sent their heads to Peking.

The Chinese, perceiving the weakness of the Central Asian rulers, raised their heads still higher. The wise policy adopted towards the conquered people, and the administration of the country on the system first founded, ceased by degrees to be considered indispensable. Amongst other mistakes must be mentioned, the appointment to the town of Kashgar, of a Hakim-Beg and other officials from the western provinces, and the forced erection, without payment, of vast fortifications called *qul baghs* for the occupancy of the Chinese garrisons.

The officials introduced from the western provinces of China, from the towns of Hami and Turfan, came with the intention of gaining a lucrative livelihood, and they did not shrink from employing every means to attain this object. From the Hakim-Beg down to the lowest official, all looked upon the people as fair game for plunder. The flagrant exactions on the part of the Hakim-Beg were known to the Chinese authorities, and since they permitted him to continue them, they, in all probability, themselves benefited by his actions. Every protest and every act of disobedience was punished by death, and the people became still more exasperated. The more energetic amongst the population began to emigrate to Khokand, Bokhara, and Tashkent, where by their stories of the excesses of the Chinese, they everywhere excited sympathy for their native land.

In 1816, the Khwajas who had found a refuge in Khokand began to disturb the peace of Kashgaria, whereupon the Chinese entered into an arrangement with the Khan of Khokand for the suppression of all the Khwajas in his territory.

In 1826, Jahangir Khwaja obtained considerable successes, occupying Kashgar, Yangi Hisar, Yarkand, Khotan, and slaying the Chinese garrisons. In 1827 a Chinese army, having collected at Aksu, drove him into the mountains, where two columns pursued him, one moving to the Altai, thence by Ulugh-chat and the Taun-muran pass, and the other by the town of Opal, Sari Kul, and the Kizil Art pass. He was given up by treachery, taken to Peking and executed.

Executions, plunderings, and confiscations of property followed the revolt, and several thousands of Kashgarians migrated into Khokand territory. To revenge themselves on the Khokandis a blockade was established, whereby all trade with them ceased. This so affected them, that their

ruler, Madali Khan, espoused the cause of Med Yusuf, Jahangir's eldest brother, and, collecting 20,000 Kokandis, 15,000 Tashkendians, etc.,—in all 40,000 men and 10 guns—he invaded Kashgaria, captured Yangi Hisar, Yarkand, Khotan, and Aksu, and occupied them for nine months. Kashgaria, encircled by the Khokand dominions, was constantly threatened by an inroad of Khwajas or a raid of Kara-Kirghiz. Feeling themselves in no position to fight with Khokand, a treaty of peace was concluded by the Chinese in 1830, the favourable terms of which show how much the Khwajas were feared by them. By it they secured a peaceful administration in Kashgaria for fifteen years.

In 1847, the weakening of the Khokand Government under the infant Khudoyar Khan led to internal commotions, taking advantage of which, Katta Turya and six Khwajas fled from Khokand and gained over the town of Kashgar by intrigue with the Khokandi Aksakal, slaying the Chinese merchants, plundering their goods and appropriating their harems.

The Chinese collected an army numbering 200,000 men from Kuldja, Urumchi, and Liangchow and marched to Fort Maral-bashi. Fearing to encounter it with a motley gathering of 18,000 men, the Khwajas fled the country, and with them 20,000 families from Aksu, Kashgar, and Yarkand.

This flight, which took place in the month of January, chiefly by the Terek Dawan pass, was accompanied by great loss of life from the severe cold.

The Chinese again re-established their authority in Kashgaria and displayed their weakness by renewing their treaty with the Khokandis.

After the establishment of Chinese rule, matters pursued a more or less normal course until 1851, when Russia, who had then commenced the consolidation of her power in Central Asia, appeared on the scene, and by the convention of Kuldja, signed on July 25th, 1851, she acquired the right of consular representation in Ili.

In 1857, Wali Khan Turya occupied Kashgar; on the inhabitants rising, he massacred the Chinese garrison and the Chinese merchants. Surrounding himself with Khokandis, he treated the natives with disdain, imposed on them heavy taxes, exacted of them labour on earthworks and introduced social reforms most distasteful to the people—forbidding their women appear-

ing with unveiled faces, or wearing plaited hair, and directing the men to wear turbans, and to attend the mosque five times a day—and displayed great cruelty in their enforcement, executions being of daily occurrence. In the same year the Chinese reoccupied the city, to the joy of the inhabitants, the Khwaja flying to Khokand, and with him 15,000 families.

The Chinese reprisals were severe: all who had participated in the rebellion were killed, and their property was confiscated. The Kalmuks especially were foremost in the perpetration of every kind of cruelty. Thus ended the fourth attempt of the Khwajas to restore their sovereignty in Kashgaria. On this occasion the attempt only led to still greater loss to the country and to the execution of several thousand people, who were, for the most part, innocent. On this occasion, too, the principal offenders and participators saved themselves, and carried off their plunder, leaving the people, whom they had deceived, as victims in the hands of the Chinese.

After driving out Wali Khan Turya in 1857, and again possessing themselves of the whole of Kashgaria, the Chinese did not long enjoy their victory. The Mohammedan insurrection in the western provinces of China—Shensi and Kansu—quickly spread until it embraced the whole of Zungaria, and afterwards, in 1862-63, Kashgaria.

The Mohammedan population of Western China is grouped in the provinces of Shensi and Kansu, and numbers over 5,000,000. The origin of these Mohammedans is variously accounted for. According to some, the date of their settling in the provinces of China goes back to the eighth or ninth century, when the Chinese, after subduing the Uighur state, deported 1,000,000 people to their deserted western provinces. In course of time, these Uighurs embraced the Mohammedan faith, and through inter-marriage with Chinese damsels, lost their primitive type, and now bear but little resemblance to their kinsmen who remained in Kashgaria. The same Mohammedans who peopled the western provinces of China afterwards formed the bulk of the people of Zungaria. The people of Kashgaria, who are alien to these Chinese Mohammedans begin on the west of Fort Karashar and the town of Khurla. They take the name of the locality in which they dwell; thus, we find Karasharians, Aksutians, Yarkandis and Khotanis. The Chinese call their Mohammedans “hui-hui”.

4. *The Tungan Rebellion.*

In Kashgaria, the same Chinese Mohammedans are known under the name of Tungans or Tunganis, and the insurrection which they initiated is called the "Tungan insurrection." The derivation of the word "Tungan" is not exactly known. According to oral tradition, the derivation of this name is some times traced to the epoch of Alexander of Macedon, at others to the days of Jenghiz Khan or Timur Lang. It is thought, too, that in the movement of bands of these popular heroes from the east to the west, and from the west to the east, many of their soldiers remained behind, and consequently received the name of Tungan, which means "those left behind."

The rising began in the year 1861, during the last year of the rule of Sian-Fwin, in the province of Shensi, and spread to the province of Kansu and then to Zungaria.

The insurrection was signalised by the dreadful, and in places, the total destruction of the Chinese. The first attempts of the Chinese Government to suppress it were not attended by success. On account of the extortions of the officials, and the privations to which they were subjected, the Chinese detachments would sometimes go over to the side of the insurgents. The Chinese garrisons were obliged to shut themselves up in the citadels, and the insurgents, who were thus free to pour over the whole of the disaffected country, everywhere slaughtered the Chinese population. The hatred of the Chinese was so great that, according to M. Sonovski, Mohammedans would themselves slay their own wives and children to prevent their falling into the hands of the Chinese. The same author tells us that the Chinese amply repaid the debts, for they mercilessly wiped out their enemies. On the occasion of the siege of the town of Hochow, which lasted for seven months, 20,000 men were put to the sword by the Chinese, on the fall of the place. Similarly, at Sining-Fu, and at Gur-ki-pu, 9,000 and 50,000 men respectively were slain, whilst a vast, fruitful and thickly-populated tract was turned into a desert. Rich towns became heaps of ruins.

This revolt, coupled with the serious defeat of the Imperial Army at Taraussa, a short distance north-east of Amichow, gave the Khwajas their long sought opportunity.

The Chinese garrisons in the province were weak, and, moreover, were chiefly composed of Tungans, who, on the first intelli-

gence of the rebellion of their kinsfolk, took up arms against their employers, and, with the aid of the local population, massacred the greater part of those Chinese who did not contrive to shut themselves up in citadels. The rebellion was first discovered in the town of Kuchar. One of the inhabitants of this town, Rashiddin Khwaja, who was the first to proclaim a *jehad*, or holy war, in the year 1862, collected the people, and placing himself at their head, conducted an attack on the Chinese garrisons. The Chinese were slain, whereupon Rashiddin sent his emissaries to all the towns of Kashgaria to call upon them to rise against the Chinese. The Tungans joined the insurrection, and with their aid the Chinese garrisons in the towns of Kashgar, Toksun, and Turfan were slaughtered. The people then recognized Rashiddin's sovereignty and proclaimed him Khan. Isa Khwaja, Rashiddin's relative, was appointed Governor of the above mentioned towns. Rashiddin's two other relatives, Djalat-ud-din Khwaja and Burkhan-ud-din Khwaja, set out for the towns of Aksu, Kashgar, Yarkand, and Khotan, in order to exact from them acknowledgment of Rashiddin's title of Khan. Before their arrival an insurrection had burst forth, and the Chinese garrisons had shut themselves up in the citadels. The people of Aksu were the first to recognize Rashiddin's claim. One Sadik Beg, of Kipchak origin, was at that time an influential person in the town of Kashgar. After going out with his adherents to meet the Khwajas, he recognized Rashiddin as Khan, and his example was followed by all the inhabitants of the town of Kashgar. Having appointed Sadik Khan Hakim of the town, the Khwajas continued their journey to Yarkand.

The commander of the Chinese forces composing the garrison of Yarkand, perceiving the murmuring amongst both the inhabitants of the town and the Tungan soldiers who formed part of the garrison, decided upon disarming the latter. News of this intention quickly reached the Tungans, and caused them to rise in rebellion. At night, they broke into the citadel, which contained the Chinese garrison, consisting of 2,000 men. These they slew, together with their families. A small body of Chinese escaped by beating off their assailants and regaining possession of the citadel. In the morning the Tungans rushed into the town and, aided by the inhabitants, plundered the houses and shops of the Chinese after killing the owners. It was evident, however, that the emissaries from Aksu obtained no great amount of success in this place, the inhabitants of

which chose as their ruler Hazrat Abdur Rahman, an old Mullah. They also appointed as his assistant the former hakim of the town, Niaz Beg. The inhabitants of Khotan followed the example of the Yarkandis, slew the Chinese, and chose as their ruler Habibulla, who was also a Mullah, and had lately returned from Mecca. This man assumed the title of *padshah* (king), and began to coin money in his own name.

At the close of the year 1863, the only places that the Chinese held in Kashgaria were the citadel of Kashgar, the town of Yangi Hisar, and the citadel of the town of Yarkand. Detachments from Aksu and Yarkand were sent against the last mentioned, and a force of Tungans was despatched to the aid of these detachments. Nevertheless the citadel long withstood all the efforts of the besiegers, and when all the means of defence had failed, the Chinese commander and all his garrison heroically blew themselves up (winter, 1863). This was also the fate of the garrison of Aksu.

After this victory the Aksu Khwajas again demanded from the Yarkandis the recognition of Rashiddin's authority. The inhabitants would not consent to the demand. At length, after a long dispute, the government was divided between Abdur Rahman and the Khwaja Burkhan-ud-din. The former was supreme in the town, the latter in the fort, where were quartered the Tungans and some troops from Aksu. This state of things lasted until the time of Yakub Beg.

In the beginning of the year 1864 Rashiddin's rule was recognized throughout the whole of Kashgaria, with the exception of the town of Khotan.

The ascendancy of Rashiddin was, however, but short lived. On the invitation of a considerable portion of the population, Buzruk Khan, son of Jahangir, who was then living at Tashkent, advanced on Kashgar with a force of 400 Andijanis. Yakub Beg, of Khojent, who in early life had been a *batcha* or public dancer and had later gained distinction in fighting against the Russians in Khokand, was put in command of Buzruk Khan's army.

Buzruk Khan was received with open arms by the inhabitants of Kashgar and was proclaimed Khan.

The recognition by the inhabitants of Kashgar of Buzruk as Khan, coupled with his pretensions, as descendant of Appak Khwaja, to the sovereignty of the whole of Kashgaria, called

forth the opposition of Rashiddin Khwaja, who was ruler of the country to the east of the town of Aksu, whilst Abdur Rahman was ruler of Yarkand. The inhabitants of Aksu, Kuchar, Yarkand and Khotan, whilst bearing in mind the inroads of the Khwajas of the Appak clan, Jhangir Katta Turya, and Wali Khan Turya, could scarcely be reckoned on to make a new attempt in favour of Buzruk. Forces, both from Aksu and Yarkand, advanced almost simultaneously on Kashgar with the object of driving out Buzruk, whose position had become critical. It was only owing to the energy of Yakub Beg that he was able to hold his own.

5. *Yakub Beg.*

Leaving a small but well-equipped force to watch the citadel, Yakub Beg went out to meet the army from Aksu, and having defeated it at Khan Arik, energetically pursued its broken forces up to the hamlet of Yangiabad. After this he returned and advanced against the Tungans and Yarkandis, who were still several marches from Kashgar. An engagement took place, at Tazgun. In speaking of the fight, eye-witnesses have exaggerated the enemy's forces by several thousands of men. According to their accounts, the Tungans approached to within a very short distance of Yakub Beg's troops, and then directed against them a well-aimed fire, which caused great loss. Yakub Beg at once ordered his cavalry to attack the enemy's flanks. Having thrown the enemy into confusion by this manœuvre, he moved forward the rest of his troops and won the battle.

It is stated that Yakub Beg received three wounds in this engagement, and that he concealed the fact till the end of the fight, lest he should have depressed the spirit of his soldiers by appearing to be hurt. Following the routed enemy to the town of Yangi Hisar, he took that place by storm after a siege that lasted forty days. The greater part of the inhabitants and of the garrison perished in the siege and the assault. About 200 soldiers and women and children turned Mahommedan, and thereby saved their lives. After the capture of Yangi Hisar, Yakub Beg sent envoys, bearing gifts and the news of his victory of Alim Kul, the Governor of Khokand and Tashkent, who was at the time engaged in fighting the Russians. The envoys never even saw Alim Kul, for, before they came to Khokand, tidings reached them that Alim Kul had been slain

on the 21st May 1865, in a battle with the Russians before Tashkent. The death of Alim Kul called forth new dissensions in Khokand, all of which indirectly served as a means whereby Yakub Beg's position in Kashgaria became still more assured. At this time a large body of Kipchaks fled from Khokand by the Terek Dawan pass.

Yakub Beg gradually put Buzruk Khan on one side, and during the year 1866-67, united under one sovereignty the circles of Kashgar, Yangi Hisar, Yarkand, and Khotan, and became Khan, with the title of Badaulat, or "the fortunate one." By treacherously murdering Rashiddin and occupying Kuchar, he united all the towns of the country with a Kashgarian population under his rule.

Yakub Beg's successful stroke led to his recognition by neighbouring states and to his appointment as Atalik (Atabak) Ghazi by the Amir of Bokhara in 1866.

A boundary line was agreed upon with the Tungan chiefs, which passed through Ushaktal, $33\frac{1}{2}$ miles to the east of Fort Karashar. This limit is the natural one, and it would have been well had Yakub Beg not attempted to extend his dominion beyond it.

The Tungans of Turfan, Urumchi, and Manass refusing to respect the boundary, advanced in considerable numbers as far as Kuchar, sacking Khurla, and capturing Karashar and Kuchar. The Tungans had received great accessions to their numbers from their co-religionists of Kansu and Shensi.

Collecting his forces at Aksu, Yakub Beg advanced on Kuchar, defeated the enemy near Bai, and occupied Kuchar. At Danzil, between Khurla and Karashar, the Tungans were finally completely defeated.

Advancing after the defeat of the Tungans, Yakub Beg gained possession of Turfan and then of Urumchi, 1869-70. His army numbered 11,000 to 15,000 men, the Tungans putting 20,000 men in the field. Some accounts state that Yakub Beg in this campaign was aided by 8,000 Chinese under Shusha Hun.

Returning to Aksu, he made it his capital, and during the next five years devoted his time to consolidating his power, and gradually extending his frontier towards Khokand, occupying Ulugh-chat, Naghara-chaldi, Aghin and Irkishtam.

The convention of Kuldja of 1851 (p. 11) was followed by the treaty of Peking of November 14th, 1860, under which the frontiers of Russia and Chinese Turkistan were defined, and *inter alia*, Russia was given the right to purchase land for the erection of houses, churches, etc., whilst pastoral rights were also acquired. Hitherto the northern and part of the eastern boundary of Chinese and Russian territory has not been demarcated, but this was done by the Protocol of Chuguchak of October 7th, 1864.

In 1871 Ili was occupied by Russia, this step being taken in the interests of law and order and the suppression of chaos and anarchy which were then rife owing to the revolt against Yakub Beg. In the following year a Russian Mission under Kaufmann visited Kashgar and concluded a commercial agreement with Yakub Beg, under which trading rights were secured and the import of Russian goods was permitted subject to a maximum duty of $2\frac{1}{2}$ per cent.

In 1872 Tungan revolts in the towns of Urumchi and Manass were suppressed by Bek Kuli Beg, the Badaulat's son. From 1872 to 1876 quiet reigned in Kashgaria.

While these events had been occurring in the south-west, an independent Tungan-Taranchi government had been established at Ili which, disturbed by constant strife and bloodshed, lasted for some five years until 1871, when the Russians stepped in to preserve order and seized Kuldja.

Yakub Beg, on his part, proved himself an able and astute ruler. His independence was recognised by Russia in 1872, and subsequently by the Sultan of Turkey and by Great Britain. The Sultan of Turkey, rejoicing at such Mohammedan successes, conferred upon him the title of *Emir-al-mumenin*, or Commander of the Faithful, a title formerly borne by the Caliphs of Baghdad. In 1874, Great Britain, through Sir Douglas Forsyth, who visited the country at that time, and concluded with Yakub Beg a commercial treaty on behalf of the Government of India, stated that his kingdom had been brought into wonderful order, so that crimes of robbery and violence were almost unknown. Yakub Beg faithfully observed the treaties he had made with Great Britain and Russia although he had often many inducements to do otherwise.

6. *The Agricultural Army and Reconquest by the Chinese.*

China, if she was to recover her lost power, was now faced with two problems. The first of these was the overthrow of

Yakub Beg, and the second that of obtaining back from Russia the important territory of Ili, which is reputed to be the richest land in the Chinese Empire outside China proper, and the key to one of the main land routes between eastern and western Asia. Russia, who had, as she asserted, only occupied Ili until such time as China could restore order elsewhere, promised to withdraw when China had been successful. To this end therefore the Chinese government addressed itself. With prodigious efforts she now began to prosecute one of the most remarkable campaigns of modern history, a campaign which cost the country something like thirty millions sterling. General Tso Chung-t'ang was in supreme command and he appointed two assistant generals, Kin Shun and Chang Yao, to co-operate with him. With Sa-chow (Tun-huang) as a base they were ordered to march across the Gobi desert and subdue the country.

The chief difficulty in this operation was that of supply. To overcome this, the two Chiefs arranged that, on each oasis of the desert which they reached, crops should be grown in order to feed the expedition. For the time being the soldiers were turned into farm labourers. They sowed the seeds, they watered the fields, and when the autumn sun had ripened their crops, they reaped their harvests and advanced.

This extraordinary "agricultural army" was successful. In 1876 Urumchi fell without striking a blow, and before long, the important city of Manass had also succumbed, not without a desperate resistance, the whole garrison being massacred. From this point onwards the Chinese troops experienced little resistance, and Russia became a substantial though secret helper, probably owing to her conflict with the chief Mohammedan power, Turkey in Europe.

While Tso Chung-t'ang waited north of the Thian Shan, his subordinates pressed forward their march south of that range. The winter of 1876-77 had lowered the condition of Yakub Beg's army, especially in regard to its *morale*. Desertion had begun to spread rapidly, even amongst those persons on whose devotion Yakub Beg had always depended. The Chinese received deserters very kindly and nominated them to various posts in the country of Kashgaria.

On the 15th April 1877, the Chinese, to the number of 4,000, marched from Urumchi to Davanchin, to which they laid siege. The garrison, after a poor defence lasting three days, surrendered.

When they moved from Urumchi to Davanchin, the Chinese had made a demonstration from the town of Hami towards Turfan; 2,000 armed inhabitants held this place, and they surrendered to the Chinese without firing a shot. Hakim Khan Turya just succeeded in getting off with a handful of soldiers to Toksun, where he joined Hak Kuli Beg. The detachment then under the command of the latter was composed of 4,000 jigits and sarbazais, and 6,000 armed inhabitants.

On hearing of the advance of the Chinese, Hak Kuli Beg sent to his father who was at Khurla, for permission to send reinforcements to Davanchin and Turfan. But, before an answer could be received, these places had already fallen, and Hak Kuli Beg retreated with his whole force to the town of Karashar, fearing that he would be cut off from the Subashi pass.

The commander of the Chinese forces treated the prisoners whom he took at Davanchin kindly. He released all who were inhabitants of Kashgaria, about 1,000, and furnished them with money for road expenses and with passes, only those who were natives of other parts of Turkistan being sent into confinement at Urumchi. He further announced that he was only fighting against Andijanis, *i.e.*, the mercenaries from Ferghana and Tashkent; that he had no doubt as to the devotion of the inhabitants of Kashgaria to the Chinese Government, and that in a short time he would endeavour to free them from the extortions of Yakub Beg.

The released prisoners came to Karashar, and the rumour of the details attending their release reached the Badaulat. Considering the course of action adopted by the Chinese to be prejudicial to his interests, Yakub Beg resorted to a measure which did him still greater harm, whilst it increased the general sympathy for the Chinese. He sent directions to his son Hak Kuli Beg to deprive the released prisoners of all further power of spreading the story of their deliverance. Hak Kuli Beg, in fulfilment of his father's orders, massacred the greater number of these unfortunate persons. The remainder effected their escape and returned to the Chinese. This measure, as might have been expected, produced a result entirely opposed to that anticipated by Yakub Beg. The report of this atrocity swiftly spread throughout the whole of Kashgaria, and not only revealed the weakness of the Andijanis, but made them more detested than before. The clemency of the Chinese towards

their prisoners was exaggerated in the narration, and served to strengthen the party opposed to Yakub Beg. The effect of this story, in combination with the general discontent of the people against Yakub Beg, is the only explanation of the subsequent and unusually rapid successes of the Chinese.

In 1873 Yakub Beg had despatched a special envoy, Sayid Yakub Khan Tura, to India with the result that the Forsyth Mission left for Kashgar in 1873, and on February 2nd, 1874, a commercial treaty was signed between the Government of India and Yakub Beg, Ruler of the Territory of Kashgar and Yarkand, as he was then styled. Under article 6 of this agreement it was arranged that a British representative should be stationed at Kashgar, but the decision was stultified by the death of Yakub Beg in the summer of 1877, and our representation was, in consequence, indefinitely postponed. The exact circumstances of Yakub's death have never been accurately determined, but it is generally believed that he committed suicide on realising his critical position brought about by the success of the Chinese operations against him, and the defection of many of his principal followers. With his death, all resistance to the Chinese ceased, and the latter reassumed possession of the country with the exception of Ili, which was still in Russian occupation.

Affairs in Kashgaria were now thrown into great confusion, and, in the internal conflict which followed, organised resistance to the Chinese became almost impossible. On the day of Yakub Beg's death, Hak Kuli Beg came to Khurla from Karashar. For three whole days he told no one of his father's death. During this period all the troops at Karashar were recalled to Khurla. Having collected his forces at Khurla, Hak Kuli Beg informed them on the 1st June of the death of their sovereign, and declared that it was his intention to go to Kashgar, to consult with his elder brother, Bek Kuli Beg. Issuing two months' pay to the army during his absence, and appointing Hakim Khan Turya as his deputy, Hak Kuli Beg set out for Kashgar on the 6th June.

It was generally reported that Yakub Beg intended his younger son, Hak Kuli Beg, to succeed him. The latter was popular with the army but the people of Kashgar sided with his elder brother, Bek Kuli Beg. Evidently Hak Kuli Beg's object in going to Kashgar was to proclaim himself ruler.

On the day after Hak Kuli Beg's departure from Khurla, the troops in that town assembled and proclaimed Hakim Khan Turya, Khan. The latter immediately sent off a Kipchak, Dash Beg by name, with 500 horsemen in pursuit of Hak Kuli Beg, with orders to prevent him seizing the treasury at Aksu. On the 23rd June, Hak Kuli Beg with 30 attendants, left Aksu for Kashgar. When still 50 miles distant from that town, near Kupruk, at the bridge over the Kizil Su, Hak Kuli Beg was treacherously slain by Muhammad Zia, Pansat, who had been sent by Bek Kuli Beg to meet him.

According to another story, Bek Kuli Beg personally shot Hak Kuli Beg with a revolver when they met. He at the same time ordered all Hak Kuli Beg's followers to be slain.

In consequence of these events Kashgaria became divided into three parts, each of which had a separate ruler at its head. In Kashgar Bek Kuli Beg was supreme; in Aksu, Hakim Khan Turya; and in Khotan, Niaz Beg. These three began to fight amongst themselves. Bek Kuli Beg proved himself the most powerful and energetic. Having collected a force of 5,000 men, he advanced against Aksu. Hakim Khan Turya, collecting a body of 4,000 men, went to meet him. Near Yaida (Jaida), between Maralbashi and Aksu, the advanced guards had a skirmish, in which the Kashgarians were defeated and pursued as far as Chur Kuduk. Three days afterwards, Bek Kuli Beg concentrated his forces at the last named place whilst Hakim Khan Turya's main body was at Yaida. Between these two places a decisive battle took place, which lasted for five hours. Hakim Khan was defeated but escaped to Russian territory. His army surrendered to Bek Kuli Beg.

On the 13th August 1877 Bek Kuli Beg entered Aksu in triumph. On the 5th September he started on his return journey to Kashgar, where he gave his troops a month's rest, after which he set out for Khotan with 5,000 men. On the 20th October he was met at Zawa by the Khotan army under the leadership of Emin Beg, brother of Niaz Beg. The Khotanis fled on the first charge of the Kashgarian cavalry. Niaz Beg, who was at the time in Khotan (Ilchi), 20 miles from Zawa, hearing of his brother's defeat, set out for Charchan. The next day Bek Kuli Beg entered the town of Khotan, and sent a party in pursuit of Niaz Beg, but the latter succeeded in effecting his escape.

In the meantime the Chinese had captured Khurla and Kuchar and General Tso, unexpectedly crossing the Thian Shan range by almost unknown passes, appeared suddenly before the walls of Aksu. The city promptly surrendered.

On receipt of this news, Bek Kuli Beg retired to Yarkand, where he had already sent his family. But meanwhile, still worse news had reached Yarkand. The Chinese soldiers, who had been made Mohammedans by Yakub Beg, forced their way into Yangishahr and shut themselves up in it. This intelligence produced a great impression on Bek Kuli Beg's followers, for many of their families were living in Yangishahr, and had, therefore, been seized by the Chinese. They began to reproach Bek Kuli Beg, saying that if he had not sent for his own family from Yangishahr, the Chinese would not have dared to resort to such an extreme measure.

A little before this, Bek Kuli Beg had sent all his infantry from Yarkand to Maral-bashi by the direct road, but on the way they all fled. Seeing that his affairs had now become desperate, he started on the night of the 16th November for the town of Karghalik, accompanied by the Hakim of Yarkand and his family.

But those whose families had been detained in Yangishahr, stopped him, and demanded that he should go with them to try and recapture this fort.

Bek Kuli Beg was consequently obliged to return to Kashgar. On arrival at Yangi Hisar, which is half-way between Yarkand and Kashgar, he gave orders that all Chinese boys at that place should be slain. Two hundred were the victims of this order. At the same time Aldash Datkha, Governor of Kashgar, killed 400 Chinese of both sexes, and of various ages, who had not gone into the citadel of Yangishahr.

On the 6th December 1877 Bek Kuli Beg came to Kashgar and took up his abode in a garden, about 2 miles from Yangishahr. He laid siege to the citadel, with some of his troops and some Tungans who had come to him from Aksu, but his efforts were unavailing. The garrison of 500 Chinese defended itself heroically; not only were all the assaults repulsed, but, almost every night, the Chinese made sorties and inflicted considerable loss on the besiegers.

On the 16th December reports were circulated throughout Bek Kuli Beg's camp that the Chinese were close to Faizabad,

40 miles from Kashgar. Aldash Datkha was sent with a force against them, but after firing a few shots, he retreated. This was the signal for a general retreat. A panic seized Bek Kuli Beg's troops and they fled into Russian territory—some to Ferghana through the Terek Dawan pass, and some to Naryn by Chakmak and Artish. The same evening a small reconnoitering party sent by the Chinese from Maral-bashi entered Kashgar.

Bek Kuli Beg's troops were followed by thousands of the inhabitants of Kashgar, for they feared a repetition of those atrocities which had on every occasion attended the appearance of the Chinese after the expulsion of the Khwajas, Jahangir, Wali Khan, and Katta Turya. These unfortunate people set out for the Terek Dawan and crossed the range of mountains bordering it at a time when there were 30° of frost. There now began a repetition of the horrors which attended the flight of the Kashgarians after Katta Turya's expulsion, when tens of thousands perished from frost and hunger (see page 11). Happily for the fugitives on the present occasion, Major Yonoff, an energetic and experienced Turkistani, commandant of the Osh district, in which the Terek Dawan pass is situated, adopted measures for their assistance. He himself, accompanied by his second-in-command, Captain Roselein, set out for the pass, and at once organized measures for the relief of the Kashgarians who reached Russian territory almost frozen and perishing from hunger. The fugitives were warmed and fed, and sent on horses to Osh. All who crossed into Russian territory were saved. The district commander of the province of Semerechensk likewise did all he could to alleviate the sufferings of those fugitives who sought safety in Russian territory.

The inhabitants of Yarkand tried to fly to Sariqol, and even to Shignan (Russian Turkistan), but the Sariqol Kirghiz made them go back and gave them up to the Chinese.

On this occasion the Chinese, taught by bitter experience, kept themselves under comparative restraint; the people were appeased; Mohammedans were appointed as headmen of the towns; trial by the Code of the Shariat was permitted, and religion was not interfered with. About ten men were executed during the first day of their return. They let the people remain in peace, and turned their attention amongst other matters, to the horses. These Kashgarians were forbidden to keep any who disobeyed this order being executed. In

the horses, which had given the Kashgarians the power of moving rapidly over vast tracts, the Chinese saw one of the principal causes of their former defeats.

Since 1877 Sinkiang has remained under Chinese rule. On the 24th February 1881 the Russians concluded the treaty of St. Petersburg with China by which the former were guaranteed freedom of trade with Sinkiang, they restored the Kuldja district to China, and received the Irkishtam post in exchange. In 1883 the frontier was fixed, on the basis of the above mentioned treaty, as far as the Uch Bel pass, whence, according to the treaty, "the Russian frontier was to go to the south-west and the Chinese frontier to the south."

In 1891, however, the Russians sent a party of about 120 men under Colonel Yonoff, with orders "to travel over the whole of the Pamirs, to clear up the situation, and to establish the rights of Russia to this portion of the inheritance of the former Khokand Khanate." This detachment, in August, arrested Captain Younghusband, C.I.E., at Bazai Gumbaz and obliged him to return to Chinese territory. For this action the Russian Government subsequently apologized to the British.

In 1892 Colonel Yonoff returned to the Pamirs with a larger force. In July an Afghan picquet of 15 men was shot down at Soma Tash, and subsequently all Chinese troops found on the Pamirs were ejected. The party then returned to Fergana, leaving a small Russian post on the Pamirs. From that time, the Pamirs have been occupied by the Russians, and the latter say that in 1894, by an agreement signed at St. Petersburg, the Sariqol range was recognized as the Russo-Chinese frontier.

In 1901, notwithstanding the above mentioned agreement, the Russians established a Cossack post of 5 men under an officer at Tashkurghan nominally as a guard to the Russian Agent and for the purpose of protecting their postal communications. In the following year the strength of the post was raised to 15 men and later to 18.

7. The Revolution of 1912.

In the early part of 1912 the outbreak of the great republican revolution in China began to make itself felt in the province.

The first district wherein disturbances occurred was Ili. There, a young Hupeh officer, named Yang Ts'uan-hsu, trained

in modern drill, organised a conspiracy and murdered the Ili Tartar General, Chih, with whom he had a personal quarrel. This administration lasted about a year. At first, Yang's intention was to declare Ili an independent state, but, subsequently, as the revolution progressed in China proper, he espoused the Republican cause. The Governor of Sinkiang, Yuen Ta-hua, still faithful to the Manchus, sent a force from Urumchi to cope with the rebels under Yang's banner. This force was defeated in the neighbourhood of Chin-ho, and all the country from Ili to Manass fell into the hands of the Ili rebels. In the meantime, telegraphic communication with Peking was interrupted and, in the absence of news, the attitude of the officials became one of great uncertainty. A certain amount of desultory fighting took place north of the Thian Shan, the losses on both sides totalling some 2,000 men, but no decisive result was reached. It was not long before the Provincial capital itself became affected. Chinese rowdies, parading as Republicans, in reality members of the *Ko-lao-hui* (secret society), with no aim but to profit by the general disorder in order to loot and extort money from the officials, dared to show openly their sympathy with the Ili insurgents. Robberies and incendiarism became rife in Urumchi. Yuen Ta-hua, however, was equal to the situation. Seeing that the regular troops were full of "secret society" men and were not to be depended upon, he hastily enlisted a few hundred Tungans as a bodyguard, and, by the judicious use of this force, he was able to control the situation in Urumchi. But, such was the severity he displayed towards those whom he suspected of being members of the *Ko-lao-hui* that he put to death with horrible cruelty more than 100 innocent persons, and so incensed was the Chinese population as a whole against him, that he had the greatest difficulty in escaping from Urumchi, protected as he was by Tungan troops.

In spite of these events in the north of the Province Kashgaria remained quiet, and it was not till the news of the complete success of the republican party in internal China was received that trouble became acute. When disturbances took place, however, they were not altogether of a party nature, but were chiefly organised by the lowest and most turbulent dregs of the Chinese population, who, linking themselves together in a regiment called, from their habits, the "gamblers," became the ruling element in Kashgar and in the other large towns of the district.

When news was received that the Republic was assured, most of the officials of the province gave out that they were supporters of the new form of government. This did not save them, however, and the majority were murdered, including Yuan Hung-shou, the venerable and respected Taotai of Kashgar who had just been nominated by the Republican Government in Peking to be Provincial Governor in succession to Yuen Ta-hua. On the morning of 7th May 1912, he and his wife were hacked to pieces in their beds by a gang of secret society rowdies, headed by two Chinese pork-butchers.

It is worthy of note that the revolution in no way affected the native portion of the population, and, with the exception of a few rowdies who linked themselves to the "gamblers," was confined entirely to the Chinese, the remainder of the population leaving the latter to settle their own affairs in their own way.

The revolution throughout Sinkiang was marked by the care with which injury and violence to foreigners was avoided and the safety of the foreign consuls was never threatened. The Russians, however, seized the opportunity to strengthen the escort of their consulate at Kashgar up to nearly 1,000 men. The extra troops sent from Russian Turkestan were withdrawn in the autumn of 1913 thus reducing the escort to its normal strength of 60 Cossacks.

As the government became stronger, the situation gradually settled down, and, on the departure of the "gamblers" who were despatched to Urumchi in October 1912, affairs apparently resumed their normal course. The only effect of the revolution, as far as this province was concerned, was the placing of a more corrupt and less trustworthy class of official in power.

All now accepted the Republican régime. The "gamblers" were no longer able to terrorise. Contrary to all expectations, throughout the period of unrest, the Tungans made no effort to revolt; indeed, they rendered substantial help to the Republican Government by keeping the Chinese rowdies in check. Now the military power in Urumchi is almost entirely in Tungan hands, and in the civil administration the Tungans are taking a larger share than they ever did before.

A certain amount of trouble was caused by the overbearing attitude of the Russian soldiery and officials towards the Chinese and the rest of the population. This culminated at Chira in an

affray in the course of which some 60 persons were killed and various houses were burnt. The cause of this affair was undoubtedly the Russian system of inducing the inhabitants, by forcible methods, to register themselves as Russian subjects. Many of the killed were these so-called Russian subjects and the Chinese official responsible was brought to Kashgar for trial at the instance of the Russian consul.

These events, although they can hardly be said to have increased Russian popularity, undoubtedly strengthened Russian influence in the province and seemed to point to a greatly increased interference on the part of Russia in the internal affairs of the province.

Before the Russian revolution, to the south of the Thian Shan, about 10,000 persons, of doubtful Andijani descent, had been registered as Russian subjects at the Russian Consulate at Kashgar. To the north of the Thian Shan, under the pressure of the Mujiks proceeding to Semerechia to settle, there is a constant emigration of Russian Kirghiz, or Kazaks, from that province into Chinese territory in the neighbourhood of Ili.

The separation of Mongolia from China and the practical establishment of autonomy in Tibet have tended greatly to the detachment of Sinkiang from China.

8. Recent History.

Since 1912, Yang Tseng-hsin, Civil and Military Governor of the New Dominion (Sinkiang), has steadily improved his position as independent and absolute ruler of the province in all but name. This remarkable man is a native of Yunnan who at the end of the Imperial régime held high office in Kansu province. In the confusion following the establishment of the Republic in 1911, he found his way to Urumchi where, with the help of General Ma, afterwards Titai of Kashgaria, he succeeded in ousting the old Lieutenant-Governor of Sinkiang, Yuan, and establishing himself in power. He is now (1927) a man of about 65, of the most abstemious and even ascetic habits, a tireless worker and merciless driver of his subordinates, unscrupulous and without pity, but able and *rusé* to a degree. By scarcely ever showing himself in public and by locking up his entire staff of confidential secretaries in his yamen, each batch for a period of a year at a time, he has surrounded himself and his office with an air of mystery which adds very considerably to his prestige.

Taking advantage of Russia's weakness, the latter has made himself and his province a power to be reckoned with in Central Asia, and the absorption of Sinkiang by Russia, which before the Great War seemed inevitable in the not very distant future, has not yet been realised.

As an example of the Governor's policy and methods, and an indication of the strength of his position, mention may be made of the successful measures taken to put an end to the tyranny of Ma Titai, the Tungan general mentioned in the paragraph above as having assisted Yang to seize the Governorship in 1911. As a reward for his services the old general (he was then over 60) was given the Titaiship or supreme military command of the Kashgar administrative circle, including the districts of Maral-bashi, Yarkand, Karghalik, Guma, Khotan and Keriya.

In 1924, Ma Titai showed signs of insubordination, as well as of exceeding all ordinary limits of exaction and tyranny, and was seized after a feeble resistance and shot by a small party of troops sent from Urumchi for the purpose, to the general satisfaction of the people of Kashgar. No Titai (Provincial Commander-in-Chief) has been appointed since Ma's death and the appointment has probably lapsed for good—as it has previously ceased to exist apparently in the other provinces of China.

The Titai's eldest son, Ma Hsieh Tai, Commandant of Kashgar Old City, was similarly dealt with at the Old City six miles away.

The position and prestige of the Chinese in Southern Sinkiang was greatly strengthened as a result of the above events. During the last few years, however, Chinese military power has reached a low ebb.

At present (1927) there are very few troops in the Kashgar area, and these are poorly armed and equipped, and of practically no value against modern troops.

No other military operations worth recording have been necessary of late, there having been no revolts or serious disturbances of any kind. As a result of injudicious severity on the part of a newly-appointed Amban of Kuchar, a Tungan rising in that district (474 miles north-east of Kashgar) was feared in March, 1924, but thanks to skilful handling from

Urumchi and also no doubt to the military display at Aksu the danger, if any, was averted. There remains the possibility of interference with the existing order by one or other of the neighbouring states, Soviet Russia or Afghanistan, which might be in a position to do so.

In 1925 the Governor of Sinkiang concluded an agreement with the Soviet Government's Mission at Urumchi for the establishment of Russian Consulates-General at Kashgar and Urumchi, but he declined to permit military escorts, as Consular Guards, as in bygone days Soviet Consuls-General arrived at Kashgar and Urumchi in 1925.

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The Swedish Medico-religious Missions both at Kashgar and Yarkand had to face a considerable amount of hostile agitation in 1923, owing to the proselytizing campaign which they initiated at the end of 1922. This campaign alarmed the mullahs who set to work to use the fanaticism of the usually lethargic and peaceable Turkis. Monster petitions were presented to the magistrate of Kashgar for the removal of the missionaries and the punishment of the converts according to the Korani Law. Six converts were imprisoned and the more fanatical mullahs incited the mob to destroy the mission and kill the Christians.

The Chinese authorities were seriously frightened. The entire staff of the Kashgar Mission, Christian and Mohammedan, ran away. There might have been a repetition of the anti-Christian riots of 31 years ago, but for the Taotai's strong attitude in stopping the agitation in April 1923.

A similar agitation occurred on a smaller scale at Yarkand. The Mission remained practically closed during the winter of 1923-24, but the various branches have since reopened.

CHAPTER II.

GEOGRAPHY.

1. General Description.

The province is bounded on the south-east by the Koko Nor district of Tibet, and the Chinese province of Kansu : on the east, north-east, and north by Mongolia (the districts of Sass Aktu, Kobdo and Tarbagatai) ; on the north-west by the Russian province of Semerechensk ; on the west by that of Ferghana ; on the south-west by the Russian Pamirs ; and on the south by Kashmir and Tibet.

Precise information is not available as to the exact limits of Sinkiang on the north and north-east. According to Chinese cartography the line of demarcation runs north-west from the hills north of Barkul, whence it strikes northwards to the Altai Chain, which forms the northern watershed of the Black Irtysh River, and runs along that chain to the Russian frontier. The Chinese regard the Black Irtysh as the frontier, and if that be considered correct, then the dividing line should be drawn along the Irtysh and Urungu rivers instead of along the crest of the Altai. The Government of China does not appear to have defined the above limits, but merely to have indicated to the governor of the province that the Kobdo district and part of the Altai may be considered for the present as coming within his jurisdiction.

The total area at present comprised is about 445,000 square miles. It forms the British consular district of the New Dominion and Kobdo under H. B. M.'s consul-general at Kashgar. In practice, however, the consul-general's district does not at present extend beyond Tarbagatai.

Owing to the revolt in Mongolia in 1921 and the occupation of Kobdo by the Mongol forces (assisted by the Bolsheviks), Kobdo and part of the Altai have passed, temporarily at any rate, out of Chinese occupation.

Both geographically and politically, Sinkiang may be divided into two areas, the boundary being the line of the main Thian Shan range :—

- (a) The basin of the Tarim or Yarkand river and Lob Nor with their drainage areas. This is generally known as Kashgaria.

- (b) The districts of Barkul, Kucheng, Urumchi and Ili, north of the Thian Shan range. In the last named area, the Tarbagatai region, though ethnographically part of Mongolia, may be included, as politically it belongs to the province of Sinkiang.

In the first area, the rivers flowing from the west and north unite into several well-defined systems, and these united form the Tarim, which loses itself in the Lop Nor marshes. The valley of the Tarim is in shape an irregular quadrilateral. Its greatest length, from east to west, is about 1,000 miles, and its greatest breadth, from the north to south, is about 500 miles. At the western end, the valley is about 4,000 feet above sea level, and at the eastern end the elevation of Lop Nor is 2,750 feet.

The soil of the Kashgarian plains is brackish: oases afford the only fruitful land. In the southern portions of the valley there are vast tracts of crumbling sands. In the northern and central parts, the sandy tracts are less frequent: they here take the form of narrow and low rows of hillocks. In the neighbourhood of the mountains the soil is covered with stones. The arable portion of Kashgaria is confined to a narrow belt skirting the highlands of the Thian Shan, Sariqol and Kuen Lun mountains. The country outside of this region consists of an almost uninhabited desert. But the belt, above spoken of, is not wide, and does not, throughout its extent, present a surface of fruitful land; the only cultivated and inhabited portions are situated within oases.

Each of these oases is an area of green corn cut off from the others by a sandy waste, in some cases over 70 miles wide. Cultivation is kept up by means of irrigation. Each of the principal rivers is diverted (after issuing from the mountains) into several main streams, from which by a system of channels the water is let out on to the fields. The boundaries of these oases are very clearly marked. Wherever there is water there is life, and where the water ceases there is desert. The sparseness of the population is the principal cause of the relatively small area of land now under cultivation. The amount of land which is suitable for irrigation and cultivation is estimated at 7,000 sq. miles and the extent of cultivation, particularly in the southern areas, is increasing very rapidly.

Of the second area, the eastern section, between Barkul and Kucheng, is practically desert steppe, forming the western exte -

sion of the great Gobi desert, and only cultivated at the larger oases. This extends, north of the line Kucheng-Urumchi, as far as lake Telli Nor and the Manass river. From here, the character of the country changes and consists of ranges of hills alternating with steppes and extending thus, north to Tarbagatai and south to the Borokhoro or Iren mountains. All this section of the country is inhabited by nomad tribes, with very occasional Chinese colonies in the more fertile districts.

South of the above-mentioned line and close to the northern slopes of the Thian Shan the country is more fertile and the settled population is greater, particularly in the neighbourhood of the Great North Road.

Cut off from this northern steppe country by the Borokhoro, Iren or Talki mountains, lies the district of Ili. This, surrounded on three sides by various spurs and subsidiary ranges from the Thian Shan, is well watered and is said to be the most fertile portion of western China.

The general geographical formation of Sinkiang is a valley, with an environment on the north, east and south, of lofty mountains. The depression itself is everywhere flat with the exception of a ridge of hills called Mazar Tagh, north of Khotan, and an offshoot of the southern range of the Thian Shan near Karashar, known as the Kuruk Tagh, which continues east to the province of Kansu. Although flat the valley is not low, but comprises a plateau varying from 2,470 feet above sea-level at Lop Nor to 4,380 feet at Kashgar. Into this valley the surrounding mountains pour numerous streams there, being sufficient to develop a considerable water system, the termination of which is Lop Nor. The main river is the Tarim, whence the depression derives its name of Tarim Valley or Basin. Between Lop Nor, Khotan and the Tarim river stretches the Takla Makan Desert.

Sinkiang is in some respects comparable with northern India, but from the presence of its rivers it has the advantage of being free from famine, that menace of all lands whose food-supply is dependent upon the rainfall. This difference accounts for the characteristic feature of the physical aspect of all Turkistan, for the Russian as well as the Chinese part of Central Asia is governed by similar conditions. Taken as a whole, Central Asia is a desert traversed by river beds, and only where rivers are found is cultivation and vegetation possible; where a river exists there we find a cultivated and thickly-populated oasis. The

climate of the mountain regions especially is liable to considerable changes within the space of a few years.

2. *The Frontier.*

With Koko Nor.—Starting in the extreme south-east (app. lat. $36^{\circ} 15'$, long. $91^{\circ} 45'$) the frontier with Koko Nor runs north-west, excluding the valley of the Ayaghkum river. At the watershed between that river and the drainage of the Chulak Akkan Kul, it turns due north and continues past the western shore of the Ghaz Kul to near latitude 30° , where it turns east by north to long. $94^{\circ} 15'$ in the neighbourhood of the Bulgan pass and Bulungin Nor.

Frontier with Kansu.—The frontier of the province of Kansu is now followed in a general northerly direction across the desert to latitude 41° , longitude $94^{\circ} 30'$. From here the frontier bends north-east to some 30 miles north of Mengshui, about latitude $42^{\circ} 30'$, longitude $96^{\circ} 30'$, where the Kansu boundary is left. This section of the frontier is crossed by the Hami-Anhsi cart road.

Frontier with Mongolia.—The frontier now curves north-west to a point some 50 miles east of Barkul, where it again curves north-north-east to lat. $44^{\circ} 50'$, long. $94^{\circ} 22'$. From here it runs due west to a point some 60 miles east of the Telli Nor lake, where the frontier of Tarbagatai begins. This runs north by east to the Uliungur lake, the western shore of which it skirts, and then continues due north to the Black Irtish river. This is followed to the neighbourhood of lat. 48° , long. $85^{\circ} 30'$ where the Russian frontier is reached.

The following roads are known to cross this section of the frontier:—

- (1) Barkul—Uliassutai,
- (2) Barkul—Kobdo,
- (3) Kuchêng—Uliassutai,
- (4) Kuchêng—Kobdo *via* Olon Bulak.
- (5) { Zaisan
Tarbagatai. }—Sharasumé.

These are said to be cart roads.

Frontier with Semerechensk.—The boundary line turns south for some 40 miles, then west, following the line of the Tarbagatai range to just north of Tarbagatai. It then turns south to a point some 30 miles north of the Ebi Nor lake.

This section of the frontier is crossed by three roads:

- (1) Sharasumé-Zaisan,
- (2) Tarbagatai-Zaisan,
- (3) Tarbagatai-Bakhti-Sergiopol,

the two last being Russian cart roads.

The frontier then leads west, crossing the Zungarian gap, and following the Ala Tau, to a point some 60 miles north-west of the Zairam Nor, whence it turns south, through mountainous country, to the Ili river, which it crosses some 20 miles west of Ilifu (Suiting). It then leads south, over the Ischkilik Tau, across the upper waters of the Tekes river (where its position has not been definitely fixed) and up the Naryn Kol river to Mount Khan Tengri.

This section of the frontier is crossed by:—

- (1) A track leading from the Ebi Nor to the Ala Kul, through the Zungarian gap—the old gate of the east and west,
- (2) The Kuldja-Djarkent Russian cart-road (see “Routes in Sinkiang, 1926” No. X),
- (3) A track leading up the Tekes valley from Shattu and across various passes to Prjevalsk.

From the sources of the Naryn Kol the frontier line runs along the watershed of the main Thian Shan range in a south-westerly direction through the summit of Mount Khan Tengri to Mount Savaktzi. Here it leaves the main range and, making a gentle bend to the south, runs down the Savaktzi spur to Mount Bostagh, crossing the Kum Arik river at the foot of the spur. From Mount Bostagh it runs along the Kok Shal Tau range to the Bedal pass. On the passes are placed two frontier posts.

The section described above extends 130 miles and is only pierced by two roads fit for pack transport:—

- (1) From Prjevalsk to Utch Turfan *viâ* the Bedal Pass, (see “Routes in Sinkiang, 1926”, No. IX),
- (2) From Prjevalsk to Aksu *viâ* the Kukurtuk pass.

Starting from the Bedal pass the frontier runs south-west and then west along the summit of the Kok Shal Tau to the Kogart pass. Here it turns south and crosses the Kok Shal (Ak Sai) river just south of the Chanchuchar pass. Thence it runs along the Kashgar Tau to the Korumduk pass, where it again turns to the west, with bends to the north and south according to the direction of the main range, and crosses the passes of Khojent, Boz Aigyr, Kurpe Bel, Kipchak, Terek, Urta Su, Kizil Kur, Turgat, and Suok (Toun). This section of the frontier which stretches for 280 miles in its eastern portion runs along the completely inaccessible summits of the Kok Shal Tau range.

In its western portion, excepting some tracks through passes of extraordinary height which are passable only by horsemen in single file, it is traversed only by two roads of any military importance. These are the roads leading from Naryn to Kashgar over the Terek and Turgat passes respectively. The former is an easy road for pack animals and the latter is a cart road constructed in 1908 by the Chinese at the request of the Russians, but it was so badly made, that it became all but impracticable for carts. The Russian railway was extended from Tashkent to Vyerni (Alma Ata) in 1927 and in 1926 the Russians began work on this road to make it fit for motor traffic up to the Turgat pass.

Frontier with Ferghana.—From the Suok pass begins the frontier between Sinkiang and Ferghana. The frontier line runs in a southerly direction along the Alai range. It is crossed by the Burgui, Jityr, Ashu, and Kogart passes. About three miles from the latter, the frontier turns to the south-west following the same range and crossing the Tuz Ashu, Kalmak Ashu, Talgui, Siedam, Savayardin, Tart Kul, and Kyz Dar passes. Near the Kyz Dar pass, the line leaves the main Alai watershed and runs down one of the spurs in a south-westerly direction to the Karachal pass, thence it turns to the south along the same spur across the passes of Ettik and Kara Bel; before reaching the Karavankul pass, it turns to the south-east along a small spur and, crossing the river Kizil Su close to its junction with the Kosh Itak river, reaches Irkishtam.

The portion of the frontier between the Suok and Irkishtam—a distance of about 100 miles—is crossed by the principal caravan road between Kashgaria and Ferghana through Irkishtam and over the Terek Dawan or Taldik passes (see "Routes in Sinkiang, 1926," No. VI In spite of the difficulties of this route,

it appears to be the only one by which the movement of loaded caravans is possible throughout practically the whole year. The Terek Dawan however is impassable during the summer months owing to the floods in the Terek defile and during this period the Taldik pass is used. On account of snow, the Taldik pass is impracticable from October to April.

Towards the north, from this road to Suok, the frontier runs through a locality which is very inaccessible on account of the extremely intersected nature of the slopes of the Alai range in Ferghana, and the number of deep and rapid rivers which have to be crossed. All this frontier is marked by frontier posts.

The frontier line between Irkishtam and Uch Bel was fixed by a Protocol, signed on the 22nd May 1884, by the Russian Commissioner, General Medinski, and the Chinese Commissioner, Sha Ta-chen. The line goes south up the river Maltabar to the hill of the same name which is situated at the head of this stream. From the summit of Maltabar, it bends, somewhat to the west, along the highest points of the Trans Alai range, then it bends again to the south along a spur and crosses the Markan Su, near the Uch Bel pass. From the Markan Su river the frontier runs in a southerly direction along the Sariqol range to the Kara Art pass (or Kalta Dawan), thence, bending to the west, it goes along the same range, across the Karazak pass to the Uch Bel or Kiziljik pass. The above described section of the frontier has an extent of about 97 miles, and runs along high snowcapped mountains. On this account it is still less accessible than the preceding section.

The roads which cross it from Karanglik to the Pamir by the valley of the Markan Su, and the roads from the valley of the Kiyak Bashi (Tumanchi Su) to lake Great Kara Kul through the Kara Art, Karazak, and Kiziljik passes are suitable for loaded transport only at the end of summer after the streams have fallen, and at the beginning of autumn. During the remainder of the year movement by them ceases.

To the south of the Kiziljik the frontier is not definitely fixed by treaty. According to Russian accounts an agreement made in the year 1894 fixed the watershed of the Sariqol range as the temporary frontier of Kashgaria on the Pamirs, and this watershed has become the *de facto* boundary between Russian and Chinese territory.

Beginning at the Kiziljik pass the temporary frontier, with some slight bends, runs eastwards across the Kiyaz, Ishi, and Uibalghun passes to the Aram Art pass. Here it turns to the south and, keeping generally to this direction as far as the Neza-tash (Shindi) pass, it crosses in succession the Ak-bardi, Chong, Kum-Jilga, Tokterek, Muzkuru, Sari Tash, Kulma, Tusakchi, Bardish, Chashman, Dun Keldik, and Okshirak passes. A little to the south of the Neza-tash it turns sharply to the east, across the Khan Uli pass, to the Taldi Kul peak, then again to the south as far as the Sari Koram pass. From the Sari Koram it turns to the south-west, across the Beyik pass, to the Povalo-Shvekovski peak (somewhat to the east of the Mihman Yoli pass), which is the extreme point of the Russo-Afghan frontier on the Pamirs, and consequently the initial point of the Afghan-Chinese frontier.

The temporary frontier of Kashgaria on the Pamirs has a length of about 190 miles.

In the summer, from May to September inclusive, this section of the frontier is passable for loaded transport by almost all the above-mentioned passes. The passes of the Sarikol range, although of very considerable absolute height, are little raised above the surrounding valleys, and are distinguished by the usually gentle nature of their slopes. From September the passes are closed, and the Pamir frontier is passable only by the Ak-bardi and Kulma passes.

According to Chinese claims, the frontier should have run south-westward from the Kiziljik to Tashkurghan on the Murghab river, and thence south-eastward to the Mintaka pass. However, since 1894 the country to the north of the Pamir river has been occupied by the Russians and the latter are now inclined to argue that the correct frontier of the Pamir should be the Muztagh Ata and its spurs to the north-west and south-east.

It appears that the Khan of Khokand levied tribute in Sariqol in much the same way as the Mir of Hunza still levies "grazing dues" on the Taghdumbash Pamir. In his book, "The Rivalry of Russia and England in Central Asia", Mons. M. Grulef wrote in 1909:—"If we turn to historical facts, we find that the eastern boundary of the Pamirs should be moved back behind Sariqol to the line of the mountains of Kashgar, *i.e.*, to the Kashgaria frontier, as it was in the sixties up to the time

of the Yakub Beg conquests ; in other words, to the line Artish—Ming-yul—Opal—Ighiz Yar, where, to the present day, traces of Chinese fortresses are to be seen. It was only owing to the weakness of the Khokand Khans that Yakub Beg succeeded in seizing almost the whole strip of territory up to what is now Sariqol. Subsequently, when the Chinese re-established their rule in Kashgaria, they adopted Yakub Beg's frontier line.

Frontier with Afghanistan, Hunza, Baltistan and Ladakh.—The frontier of Kashgaria with Afghanistan, Hunza and the Kashmir states of Baltistan and Ladakh has never been fixed by treaty, but the watershed of the Kashgarian rivers constitutes the limit of the Chinese claim. On this basis, the frontier of Kashgaria with Afghanistan westwards from the Povalo-Shvekovski peak consists of the summit of the snow-covered range which separates the valley of the Karachukar Darya from the Little Pamir and is marked by the line of passes Mihman Yoli, Kipchak, Kara Jilga and Wakhjir. From the Wakhjir pass eastwards, the frontier would be marked by the Kilik, Mintaka, Kharchanai, Khunjerab, Shingshal, Muztagh, Saltoro, and Karakoram passes. The Chinese have erected a boundary pillar on the Karakoram pass and have occupied Suget to the north of it.

Frontier with Tibet.—From this point commences the frontier with Tibet. This runs along the watershed of the Keriya river and thence along the northern ranges of the Kuen Lun Mountains. The exact alignment of this portion of the frontier is not definitely known.

SOUTH OF THE THIAN SHAN.

3. Mountains.

The most important mountain systems of southern Sinkiang are the Thian Shan, the Alai, the Sariqol, the Karakoram and the Kuen Lun ranges.

THE THIAN SHAN RANGE.

The Thian Shan acts as a great barrier separating the Tarim and Lop basins from the northern districts of Barkul, Kucheng, Urumchi and Ili.

Eastern Section.

The eastern section of the Thian Shan may be taken to include the range from where it originates in the Gobi desert at the extreme east of the Province, to the point where it is crossed by the Turfan—Urumchi cart road. This section may be subdivided into three groups:—

- (1) *The Karlik Tau.*—North-east of Hami. This group rises to a height of 4,700 feet and is barren and rugged, particularly in its southern slopes. There is little water, and the forest, so conspicuous on the western Thian Shan, is absent.
- (2) *The Barkul range.*—Between Barkul and Hami. This section only reaches the snow-line at its highest point, 13,300 feet. It is still rugged but carries a fair amount of pasturage.
- (3) *The Bogdo Ola.*—This is by far the most prominent part of the Eastern Thian Shan, both on account of its height and from the fact that it is regarded as sacred. The highest point in the range is over 20,000 feet in height and can be seen for over a hundred miles away. The slopes of this group are well-wooded, well watered and covered for the most part with fine forest and excellent pasturage. It is very little inhabited, owing to the religious veneration in which it is held, and, at least in the vicinity of the sacred lake of Bogdo Ola no cutting of trees or killing of animals is allowed.

Passes.—Through this section of the range there are many easy passes, the most important of which are:—

- (1) The Barkul Dawan, over which runs the cart road from Hami to Barkul.
- (2) The pass north of Ch'ihochingtzu on the cart road from Hami to Kucheng.
- (3) The Davachin pass on the cart road between Turfan and Urumchi.

These passes are sufficiently easy to allow of cart traffic being regularly used over them, that between Hami and Barkul being avoided, however, when possible, owing to its steep gradients.

This section of the Thian Shan throws off no subsidiary ranges of any importance.

Central Section.

The next section of the Thian Shan is that lying between the Toksun—Urumchi cart road on the east, and mount Khan Tengri on the west. The general trend of this section is west by south. This part of the range reaches well above the snow line and throws off numerous subsidiary spurs, forming a most complicated mountain system.

The following are the names applied locally to various parts of this section, from east to west:—

- (1) *The Katyn Daba, Katyn Bogdo and Abdur Cholon*, in which the Manass, the Algoi, the Khutuk Be and Yulduz rivers have their sources. The northern slopes of this portion are well wooded and intersected with many deep ravines, while the southern slopes are less wooded and more precipitous.

Passes.—The passes in this region are little known and lie at a height of from 10,000' to 12,000', the Zagisti, Chogun Nur and Dundekelde passes being suitable for transport.

- (2) *The Narat*, separating the Little and the Great Yulduz valleys from that of the Kunges river. The eastern portion of this has a height of about 10,000 feet, but to the west it rises from the Dagit pass and most of the peaks are above the limits of perpetual snow. The northern slopes are covered with thick pine woods and excellent pasturage. Of the southern slopes but little is known.

Passes.—Over this portion of the main range, the Adunkur (9,800') and Narat (10,000') passes, leading from the Yulduz to the Kunges valleys, are the most suitable for the movements of transport.

- (3) *The Karagai Tash*, separating the Yulduz valley from the basins of the Jirgalan and Kok Su rivers.

This is by no means precipitous, and is well wooded on the northern and western sides, while the southern slopes are covered with excellent pasturage.

Passes.—It is crossed by the easy Karagai Tash pass leading from the Yulduz into the Kok Su valleys.

(4) *The Khalyk Tau, Terskei, Yeshik Bashi and Muzart.*—

The main range now turns west and this section is distinguished by its extreme height and difficulty.

Passes.—It is crossed by only one pass, the Muzart (11,480'). The route over this pass lies along a glacier and is difficult but is used throughout the year by traders. No great labour would be required to make it quite easy. A brisk trade is carried on over it between Aksu and Kuldja.

(5) *Mount Khan Tengri.*—West of the Muzart pass this mountain or rather group of peaks rises to a height of nearly 24,000 feet. On it are numerous gigantic glaciers.

The central section of the Thian Shan range throws out the following important subsidiary ranges :—

A.—To the North :—

- (1) *The Borokhoro, Iren or Talki mountains*, which divide the Kash from the Manass river systems and, extending past the south of the Zairam Nor lake, enter Semerechensk. (These are described under ranges north of the Thian Shan.)
- (2) *The Arshan range*, dividing the Kash from the Kunges river.
- (3) *The Yavur range* dividing the Kunges from the Jirgalan rivers.
- (4) *The Sari Tur*, dividing the Kok Su from the Jirgalan basins. This is crossed by the easy Jambil, Sari Tur and Kurdia passes.
- (5) The range between the Agias and Kok Su rivers, crossed by the easy Sari Tur, Bieke and Kok Bel passes.

These ranges are gently sloping, rounded and down-like. They can be crossed in many places by horsemen and are covered with rich pasturage alternating with pine woods. They are important as they increase the difficulty of the routes between Tli and the Kashgarian basin.

B.—To the south :—

- (1) *The Borto Ula, Argie or Chol Tagh range.* This leaves the main range at the sources of the Balgintaya river. As far as the Ulatai Chogan pass it is a high level plateau. Southward to the Bsergin Dawan pass, it rises and becomes a high, snow covered chain. To the west it is steep and for the most part covered with pine woods. On the Kashgarian side the range throws out gentle spurs, separated by wide valleys which abound in water, pasturage and groves of poplar, elm, and brushwood.

From the Bsergin Dawan, the range, under the name of the Argie hills, decreases much in height and extends east under the name of Chol Tagh to the south of Pichan. Its southern slopes are rounded and gentle, while to the north are steep precipices separated by deep ravines. At the eastern end of the range there is a lack of water and vegetation.

This range is united to the Kuruk Tagh by the Karaksi and Ngerchi hills. In the basin thus formed lies the Bagrash Kul.

Passes.—The most important passes through the range are the Ulatai Chogan (10,400') Bsergin Dawan (8,380') and the pass on the cart road between Karashar and Toksun.

- (2) *The Saarmin Ula* which, starting from the Abdur Cholon heights, bounds on the east and south the valleys of the Great and Little Yulduz. Almost the whole of this range is wild and rocky, and in places is above the snowline.

Passes.—The passes through the range lie at a height of about 10,000 feet. The best of them is the Khabtzagai or Kotil, on the road from the valley of the Little Yulduz into the valley of the Balgintaya.

- (3) *The Kuruk Tagh range* which, starting from the source of the Kungei Koksui river extends almost as far as the town of Sachow (Kansu). In the northwest section of the range it is known by various

local names—Tsyudir-ula, Kok Teke, Bugur, Boro Khatan, etc. As far as the Kok Teke pass at the source of the river Dinar, the range is a snow-covered ridge with wild precipitous summits. The width of the range in this section reaches 65 miles. Its southern slopes, which are nearly four times as steep as the northern ones, are intersected by deep, narrow ravines, and in their upper zone they abound in glaciers, which extend down to an elevation of 12,500 feet; below the glaciers the north-eastern slopes are covered with excellent alpine meadows. On the Kashgarian slopes the glaciers lie at a considerably greater elevation; at the bottom of the ravines watered by the little streams are found occasional trees and bushes, the open hillocks being covered by a thin vegetation consisting of grass and bushes. From the Kok Teke pass, the Kuruk Tagh becomes lower and narrower and loses its covering of snow. It falls gently towards the Konche river, and at the place where it is cut through by the river, it is not more than 7 miles wide. Beyond this point the range is of no military importance.

Passes.—The following passes lead through this range:—

- (1) The Kui Kule (11,500') on the road from the valley of the Great Yulduz to Kuchar.
- (2) The Kok Teke (12,570') on the road from the same valley to Bugur.

Both the above passes are very steep and difficult, being covered with large boulders and fragments of rock.

- (3) The Ulan Bilen on the road from the Yulduz valley to Bugur. This is considered the best way into the Yulduz valley from the plains of Kashgar.
- (4) Ravine of the Konche river. This is a winding ravine cutting through the range with a minimum width of 500 yards. Through this there is a cart road which formerly was excellent but is now in bad repair and is often difficult in places. The pass is closed by a Chinese fort at the narrowest place.

Western Section.

Mount Khan Tengri divides the Thian Shan into two distinct parts, the eastern part (comprising the above described sections) consists practically of a single distinct range forming the watershed dividing the Manass and Ili basins from the tributaries of the Tarim.

West of Khan Tengri, the Thian Shan presents a complicated system of plateaux and short ridges without any chief range. The whole locality, from the Khan Tengri to the Suok, and from the Issyk Kul to the southernmost ridge, is a huge elevated plateau with a surface broken up by numerous ridges. The highest elevation is at the Ak Shirak hills near the sources of the Naryn and Irtash rivers. To the west of Khan Tengri the Thian Shan forms two watersheds—the northern between the steppe rivers of Semerechensk and the river Syr Daria, and the southern between the Naryn river and the rivers of Kashgaria.

The Northern Watershed Range.—The hills of the northern watershed are entirely in Russian territory, and therefore will only be described sufficiently to make clear their importance as obstacles on the roads from Prjevalsk and Naryn to the Kashgarian basin.

The northern range extends westwards from Khan Tengri, south of the Issyk Kul and north of the Son Kul, and finally merges in the steppes of the Aral-Caspian lowlands.

Its eastern portion, from Khan Tengri to the Barskoun pass, forms a serious obstacle on the lines of advance from Prjevalsk, to Uteh Turfan, and to Kashgar itself. This is an unbroken mountain chain with an average height of from 13,000 to 15,000 feet. The eastern end of the range is low and free from snow. To the west the range rapidly rises in height and forms a high, snowy wall. Its northern slopes, which are covered with thick pine woods, are steep, but a long re-entrant falls to the Issyk Kul, above which the summit of the range rises some 6,000 to 9,000 feet. The southern slopes of the watershed form a short, in places steep, and in others almost imperceptible descent to the upland plateau which is called the Syrt. The relative height of the range above this plateau varies from 2,000 to 5,000 feet, and is in places even less.

Passes.—The roads from Prjevalsk to Uteh Turfan and Kashgar cross the range by two groups of passes, the eastern con-

sists of the Turgen Aksu and Kara Kyr passes, and the western of the Kizil Su, Zouku Chak, Kashka Su, Zaoka (Juka), and Barskoun passes. All these passes have on the average not less than 14,000 feet of absolute height and are very difficult. In the winter only the Zaoka (Juka) is passable, as it is seldom covered with snow. From the source of the Yak Tash the northern watershed continues in the same direction and keeps its snow-covering almost to the point where it is crossed by the Tokmak—Naryn cart road.

The Syrt.—To the south of the watershed, as far as the southernmost range, which constitutes the frontier between Kashgaria and Semerechensk, stretches the Syrt, as the Kirghiz call the high undulating uplands which cover the intervening branches of the two main Thian Shan ranges. Between them, lie broad, upland valleys which have an average height of about 10,000 feet. The ridges which separate these valleys have not more than 1,000 or 2,000 feet of relative height, and have mostly gentle slopes, but many of them are covered with snow and glaciers. The Syrt is remarkable for the complete absence of trees and the insignificant quantity of bushes, which are only found occasionally, by the banks of the rivers and in deep hollows; its flat ridges are very deficient in pasturage, which only exists in the valleys and occasionally in the ravines near the summits.

The eastern end of the Syrt is filled by the high, snow-covered, and inaccessible ranges Sari Jas and Kulu Tau and the Ak Shirak, the valleys and ravines of which are blocked by glaciers.

At the southern end of the Ak Shirak, a small, gently-sloping ridge, forming the watershed between the Karasai and Ishtyk Su, unites it with the Borkoldai range, which, in its turn, joins the southern frontier range near the Bedal pass.

Passes.—Of the passes through these hills the following are important: the Kulu, Ishigart and the Ak Bel. The first two lie on the eastern (Karakyr) road from Prjevalsk to Uteh Turfan, the last on the western road (*viâ* the Zaoka) pass. The Kulu pass is noted for its steep, precipitous slopes, and is one of the most difficult in the Thian Shan. From the middle of October to the beginning or end of April it is covered with deep snow. The Ishigart and Ak Bel passes, notwithstanding their considerable absolute height, are very convenient for pack transport and are open almost the whole year round.

The Kokshal Tau.—The southern frontier range, known as the Kokshal Tau, extends westwards from the Kum Arik gorge to the defile of the Kokshal river. This range, throughout, reaches well above the perpetual snow line. It is higher to the east, and ends to the west, in a low, gently-sloping ridge, close to the junction of the Mudurum and Ak Sai rivers. The northern side of the range is precipitous, and the southern side is a long, gentle slope, covered with stones and boulders, and is almost completely bare of trees and grass.

Passes.—The Kokshal is passable only by the following five passes:—the Kaiche, Kukurtuk, Bedal, Kogart, and the Chanchuchar. The average height of these passes is about 14,000 feet. The best of them is the Bedal, on the caravan road from Prjevalsk to Utch Turfan. It is difficult, being always covered with ice. The northern side is very steep, the southern less so. The remaining passes are very difficult, their northern slopes being very steep, but the ascent on the southern side is as a rule less severe.

The Naryn or Koshunkur Tau.—About 35 miles from the Bedal pass, the southern frontier range throws out to the northwest another ridge, which the Prjevalsk—Kashgar road crosses by the Kubergen pass. Near the Kubergen pass, the range is a low, rocky chain, little raised above the surrounding locality. From this pass, the range rises, and is soon covered with snow. About 13 miles to the west of the Kubergen, the range divides into two branches, the Naryn Tau or Koshunkur Tau to the north, and the At Bashi Tau or Ak Tash to the south. As far as the junction of the Great and Little Naryn rivers, the Naryn Tau is covered with perpetual snow, and its sides are steep and rocky. Further on it becomes lower, and near the At Bashi ravine it changes into a row of low, clay hills with steep northern slopes.

Passes.—These ranges are crossed, by the Kubergen pass on the Prjevalsk—Naryn road, by the Ulan pass and by the Char Karishmi pass (8,640'), which is on the Naryn—Kashgar cart road and is fit for wheeled transport.

The At Bashi Tau.—As far as the Karga Jailga pass, this range is covered with snow, then its elevation over the neighbouring valleys becomes quite insignificant. From the Tuz Ashu pass the range rapidly rises, and extends to the Shirikti pass as a rocky, snow-covered chain, individual peaks of which attain a height of 16,000 feet. From this

point the range again rapidly falls and ends in the low Chirtash ridge which, uniting with the southern frontier range, forms the watershed between the Chatyr Kul and Arpa valleys. The At Bashi Tau bars the roads from Naryn to Kashgar, with the exception of the most westerly, which turns the range from the west, by the Kara Kain and Arpa valleys.

Passes.—The passes are, from east to west,—the Karga Jailga Balik Su, Kaindi (11,115') 'Tuz Ashu (10,700'), Besh Pilehir, Taldi Su, Bogusht (12,590'), Shirikti, Keltebuk, and Tash Rabat (12,900'). They all close almost simultaneously in September and open in the beginning of May. The best and most convenient are the Kaindi and Tash Rabat. The last is very steep and difficult.

The Kashgar Range.—From the ravine of the Kokshal river the southern range of the Thian Shan, under the name of the Kashgar Range, extends as far as the knot of hills at the source of the Suok (Toun) river. At the eastern and western ends of the range many of the peaks are above the snow line, while the central portion is considerably lower and is free from snow.

Various portions of this range have various local names—Kok Kya Tau and Gulja Tau at the eastern end, Kara Teke Tau, Karma Teke Tau, and Suok Tau to the west of the Turgat pass. To the north, between the valleys of the Ak Sai, the Chatyr Kul and the Arpa, the range throws out a number of long, gently sloping spurs which, by degrees, unite with the undulating surface of the valleys. The northern slopes of the range are fairly rich in pasturage, but completely devoid of all other vegetation. The southern slopes are steep, and the pasturage here is much poorer, but, in the deep ravines of the rivers flowing from it, are to be found hill poplar and other bushes. This section of the frontier range, owing to the number and convenience of its passes, is the most accessible of the whole Thian Shan system.

Passes.—The most important passes on this range are :—

- (1) The Terek pass (12,800'), on the road from Naryn to Kashgar. The northern slopes are gentle, but the southern are so steep and rocky that they are only descended with difficulty by fully loaded horses. This pass, although it is somewhat higher than the Turgat, is open almost all the year, being closed for only three or four days, after severe storms.

- (2) The Turgat pass (12,700') on the Naryn—Kashgar cart road. This is open practically the whole year and is so gentle and accessible that it is fit for wheeled transport.

Less important passes are the Chon Uru, Botmanak, Kara Jilga, Korumduk, Khojent, Boz Aigyr, Kurpe Bel (Ishagart), Kipchak, Urta Su and Kizil Kur in the same section of the frontier range; their southern slopes are steep, and they are passable only during five or six months of the year; during the remainder of the year they are closed by snow. The Kara Teke pass, on the road from Kashgar to the Turgat pass is used in the summer months, when the Chakmak river is in flood and, consequently, difficult of passage for baggage animals. On the north side the ascent is steep and the track zigzags up to the summit. It could easily be improved. On the south it is not so steep. The road, from the summit, runs for about 5 miles through a narrow valley and then emerges into the more open stony bed of a river. There is water, fuel, and grazing, in the upper part of the valley. The Suok (Toun) pass, in the Suok valley, on the road from the Arpa valley is considerably better than the passes described above; its slopes are gentle and fairly soft, but it is open only during the two summer months of June and July. The height of the Suok pass is 13,000 feet.

The Kara Teke Range.—An important subsidiary range extends in a north-easterly direction from the neighbourhood of the Korumduk pass almost as far as the junction of the Ak Sai and Aksu rivers. From the rocky summit of the range towards the valley of the Ak Sai, there extends, at first, a short fairly steep slope, covered with pine woods, juniper and other bushes, after this, broad gentle terraces with splendid meadows, and, finally, a very steep and rocky slope down to the river, completely bare of vegetation and intersected by narrow, dark ravines. The southern slopes of the range are of a desert character, streams are very seldom met with, and the vegetation, except in a few well-watered valleys, is extremely poor and monotonous. The average height of this range is not less than 9,000 feet, with a few peaks, in the western portion, which extend above the snow-line. It affords cover to the Aksu—Maral-bashi—Kashgar road from the direction of the Bedal pass. The northern slopes of the range consist of short, rocky, ridges, separated by wide, boulder-strewn valleys. The slopes towards the valley of the Ak Sai river are steep.

Passes.—The range can be crossed by the following passes: the Belowti (11,300'), Gulja Dawan (11,000'), Kryk Boguz, Dungaret Me (8,670'), and Sari Bel. The two first are on the roads from Uteh Turfan to Kashgar, and notwithstanding their considerable height they are very easily crossed, especially the second. The last three are on the roads from Uteh Turfan to Maral-bashi.

The ascent from the north up the Dungaret Me pass runs at first through a narrow ravine, with perpendicular walls about 700 feet high and a width of from 7 to 12 yards, and afterwards by steep zigzags up a narrow valley which is bounded by low mounds. The descent to the south is at first gentle, and afterwards falls steeply along rocky slopes into a ravine which opens into a gently sloping valley. The pass is practicable for fully loaded camels. The Kryk Boguz and Sari Bel passes have not been explored.

The remaining southern spurs of the main frontier range are narrow, rocky ridges which rapidly fall as they recede from the main range. The ravines separating them are, in places, narrow passages, with perpendicular walls, whose height is from 150 to 300 feet. The slopes of these spurs are deficient in vegetation, but, in the broader places of the ravines, there are sometimes found poplars, and small meadows of good grass.

From the hills at the source of the Suok, the frontier range separates into two branches, the Ferghana range to the north-west and the Alai range to the south-west.

THE ALAI RANGE.

The Alai Range in the section from the Suok to the Kyz-Dar pass, forms the frontier between Kashgaria and Ferghana, and, from the Suok to the Shart Dawan, it forms the watershed between the basins of the Syr Daria and the Kizil Su. The average height of the range is between 13,000 and 14,000 feet; its summit, for the greater part of its length, is above the snowline, which, on the northern and north-eastern slopes, descends to a height of 13,000 feet, and, on the southern and south-eastern, to a height of 14,000 feet. To the south-west, the range rises considerably; individual peaks are as high as from 16,000 to 18,000 feet.

The slopes of the range are not similar; the Ferghana slopes are, in their upper zone, gentle and covered with excellent pas-

turage ; lower down, they are intersected by deep ravines in which is found a rich and varied vegetation. The slopes towards Kashgaria are distinguished by their steepness and the almost complete absence of vegetation.

In its north-eastern section, the Alai range throws out into the Ferghana valley a number of long, high spurs, which, intertwining with each other, produce, at the source of the river Tar, the extremely intersected and difficult locality called Alai Ku. On the Kashgarian side also the Alai range throws out some important spurs which will be described hereafter.

Passes.—The passes through the main Alai range, which are deeply cut down into its summit, lie at a height of from 11,000 to 13,000 feet above sea level. Beginning from the north-east, they lie in the following order : the Suok, Burgui, Jityr, Ashu, and Kogart, on the roads leading from Oital to the valley of the Suok ; the Tuz Ashu, Kalmak Ashu, Talgui, Siedam, and Savayardin, on the roads from Oital to the valley of the Uch Tash ; and the Tart Kul and Kyz Dar, on the roads from Oital to the river Eghin.

The passes leading into the valley of the Suok, notwithstanding their considerable height (about 13,000 feet), are convenient, especially the Suok. Their ascents and descents are gentle and the surface is soft.

Of the passes at the sources of the Uch Tash and Eghin, only the Tuz Ashu can be considered suitable for transport ; the remainder have very steep ascents and descents, are covered with fragments of rocks, and their surface is very hard.

The greater number of these numerous passes is open only in summer for 3 or 4 months, being impassable during the remainder of the year on account of snow drifts. Even in summer, movement through them is accomplished with great difficulty. The chief obstacle is not the passes themselves, but the Alai Ku district lying in front of them on the Ferghana side. The extremely intersected nature of this country, and the difficulty of crossing its numerous deep and rapid rivers, diverts caravans between Ferghana and Kashgaria to the southern roads, which are more circuitous and less rich in water, fuel, and grazing. Thus these numerous passes have only a local importance.

The passes lying to the south of the Kyz Dar are in Russian territory. Of them, the most important for the invasion of

Kashgaria, are the Terek Dawan, Shart, and Taldik (11,605'). The first of these lies on the main caravan road from Ferghana to Kashgaria, and is accessible for caravans only during three months of the year—April, May, and June—in consequence of the great rise of the water in the rivers flowing from it, and the pools of water formed under the snow on its southern slopes. On the Shart and the Taldik, which have been made into cart roads, caravans can move in summer, using the then excellent pasturage of the Alai valley.

The Koktan Range.—The eastern spurs of the Alai range, which fill the extreme north-east corner of Kashgaria, are little known. Of them, the most important, starting from near the Kogart pass, extends, at first, eastwards to the Jir Ui pass, forming the watershed between the Jir Ui and Suok rivers. It then leads towards the south, and, finally, branches north-east and south-west, the two branches forming a continuous range known as the Terek Tau or Koktan. This in turn throws out several spurs, of which the Uruk Tau separates the valleys of the Suok and Uruk, and, finally ends in the low, clay ridge of Ak Tash, about 7 miles from Kashgar, while the Kara Bokter and Kuzgun Tau divide the head waters of the Uruk river from the Kizil Su. At the sources of the Uch Tash and Uksalir many of the peaks of the Koktan range are above the snowline. As the range runs to the south-east, it becomes lower, and, east of the point mentioned, there is apparently not a single snow-topped peak. The vegetation on the hills also becomes gradually poorer as one goes eastward. The good pasturage and *tugrak* groves, which abound in the valleys of the Uch Tash, Uksalir and Kosh Uyak change into occasional clumps of tamarisk and thorn bushes.

Passes.—Of the passes in the Koktan and its branches the most important are the Akran and Sasik. The former leads from the valley of the Uch Tash to Uksalir on the Irkishtam—Kashgar road; the second leads from the valley of the Suok to the post of Karangalik on the same road. The Akran has steep, rocky slopes and is not convenient for movement; the Sasik has a soft, gentle ascent from the Suok side, and a short, steep descent on the Karangalik side.

The passes in the southern spurs of the Koktan, which are crossed by the Irkishtam—Kashgar road, in the section Ulugchat—Kizil Ui, at an elevation of from 8,000 to 9,000 feet, are very slightly raised above the surrounding locality, and have gentle slopes with a soft, clay surface. Consequently

as obstacles they are insignificant ; vastly more difficult are the steep and long descents into the valleys of the rivers which have to be crossed.

Between the Siedam and Kyz Dar passes, the Alai throws out, in a south-westerly direction, some narrow precipitous ridges which cover the approach to Ulugchat from the side of the passes of the eastern Alai. On the southern end of one of these, lie the Akin and Savankul passes, on the circuitous road from Eghin to Ulugchat. Both passes have soft and gentle slopes, and turn the crossing of the Kizil Su between these two places, which are very difficult when the river is full.

The next branch of the Alai, starting near the Kyz Dar pass, extends to the south-west, forming the frontier between Ferghana and Kashgaria. Its average height is from 9,000 to 10,000 feet. Its northern end is wild and precipitous, but, as it approaches the Kizil Su, it becomes lower and less severe in outline. It blocks the roads from the Beleuli and Terek passes to the valley of the Eghin and to Irkishtam.

Passes.—Its passes lie at a height of about 10,000 feet. The most northerly of them, the Karachal and Ettik, lead from the valley of the Kok Su to Eghin, on the circuitous road from Irkishtam. The Kara Bel (Sasyk Unkur) and the Ekezek, lead from the same valley to Irkishtam. The first three passes are very steep ; the roads leading through them lie in narrow, precipitous ravines, and are very difficult for pack transport. The Ekezek pass (11,000'), on the caravan road from Osh to Kashgar, is in Russian territory and has soft gentle slopes with slight relative elevation, and, consequently, it could be converted into a cart road at slight expense. In the south-eastern branches of this spur, there are two passes on the same road, the Karavankul in Russian territory, and the Kara Dawan between Irkishtam and Eghin. The former (9,500') is easy, with soft clay surface ; it is quite convenient for pack transport, and could easily be made into a cart road. The latter has a rocky summit ; the ascent from Irkishtam is easy, but the descent to the Eghin valley is steep and rocky.

THE TRANS-ALAI RANGE.

A gently-sloping and comparatively low spur, forming the watershed between the Alai river and the Kizil Su, unites the Alai range and the Trans-Alai. The latter enters Kashgaria

chiefly by its eastern spurs. From Mount Maltabar to Mount Kurundi, it forms the frontier between Kashgaria and Ferghana. The chief range has an average height of about 18,000 feet with individual peaks which are as high as 23,000 feet. Its eastern spurs separate the Kizil Su from its tributary the Markan Su. It is generally a snow-covered range with very steep slopes.

Passes.—In Kashgar territory, there is only one road uniting the two valleys mentioned—a very difficult, rocky path, from the ruins of the Nagra Chaldi post on the Kizil Su, to the village of Kugrim in the Markan Su valley, by the Silyusin Kya pass. In the ravines of the northern slopes, are groves of firs, sabine trees, birch, poplars and various bushes; on the southern slopes, under the very crest, are excellent pastures.

THE HINDU KUSH.

The mountain system of the southern and western frontier districts of Kashgaria is extremely complicated. On its frontier with Russia and India, the huge mountain system of the Hindu Kush meets, almost at a right angle, the Mustagh, the principal range of the second mountain system of Central Asia—the Karakoram. At the place of meeting, there is an enormous knot of mountains, which feeds with its glaciers the tributaries of the Oxus, the Indus, and the Tarim. From this point, the Karakoram extends to the south-east towards the Lingzi Thang plains, where it unites with the high flat plains of north-western Tibet. North-north-west from the place of meeting, are the Pamirs, which at the end of their eastern system, form a system of extremely low ridges, extending in the same north-easterly direction as the Hindu Kush. Coming closer together towards the east, the Pamir hills form a compact chain, running almost due north and south, and uniting the Trans-Alai range on the north with the Karakoram on the south. This range is called the Sariqol.

To the east of it, lies a system of mountains with a general direction towards south-south-east, which was known to ancient Chinese geographers under the name of the Tsung-ling or Onion Range. The Tsung-ling gradually merges into a system running east and north-east—the Nan Shan or Southern Mountains which bound on the north the tableland of Tibet. The latest explorations have shewn that the Tsung-ling and the

Nan Shan form one system, which extends in a gigantic bow from the sources of the Markan Su almost to the shores of the Pacific Ocean. This system has received the name of the Kuen Lun. Forming, during almost the whole of its extent, a very broad system, the Kuen Lun in its extreme western portion meets the Karakoram and the Pamirs, bends to the north and becomes closely united with them. Thus, on the western and southern frontiers of Kashgaria, the Sariqol range, the Karakoram and the Kuen Lun form a broad mountain girdle, consisting of two bows which unite at their north-western end and separate towards the north-west of Tibet.

THE SARIQOL RANGE.

The Sariqol range extends from the source of the Markan Su to near the Wakhjir pass, at the source of the river of the same name, where it joins the Hindu Kush and Karakoram ranges.

In its northern part, as far as the latitude of lake Bulun Kul, the range consists of relatively low hills with gentle slopes. From the main range are thrown out long spurs, separated by wide valleys, amongst which the chief summit of the range is completely lost. The hills and valleys are covered with grass. To the south of Bulun Kul the range becomes considerably higher. Its eastern slopes, towards the valleys of Basik Kul, Little Kara Kul and Subashi, are steep. South of the Ulug Rabat pass there are high peaks (Char Basin and Galankul). From the Gidjek post, on the northern entrance into the Tagharma valley, the main range has fairly broad slopes, at the foot of which extends a rocky, sterile district, which the natives call *sai*. South of Tash Kurgan, the Sariqol range is a high granite chain. The average height of the range is not less than 15,000 feet, and individual peaks such as the Taldi Kul (20,722'), and a peak near the Bayik pass (18,690'), are much higher. The summit of the range is intersected by deep hollows.

In its upper zone, the eastern and southern slopes of the range are very steep and almost completely bare; lower down there extends a long slope gradually falling into the valleys of the Karachukar and Taghdumbash. Vegetation is seen only in the shape of clumps of willows and juniper bushes on the banks of the rivers, in hollows, and in mountain ravines; there is pasturage on the banks of the rivers and occasionally, in the upper zones of the range, between the cliffs. The slopes of the foot-

hills are generally sterile and rocky. On the Pamir side, the range ends in long, gentle slopes, covered with excellent pasturage. The Sariqol range, notwithstanding its considerable average height, is very accessible, especially in its northern and central parts.

Passes.—There are the following passes in the Sariqol range:—

- 1 and 2. The Kum Bel (13,820') and the Kosh Bel (13,600'), in the northern extremity of the range, on the road from the valley of the Markan Su to the valley of the Kiyak Bashi.
3. The Kara Art (16,410'), on the road from the valley of the Great Kara Kul to Muk Kurghan and Kashgar. This pass has soft soil and gentle slopes.
4. The Karazak, a very high pass with gentle slopes. Owing to the open nature of the summit and the continual winds, this pass is not closed, even in severe winter.
- 5, 6, and 7. The Uz Bel (15,300'), Oi Balgin (15,500') and Aram Art passes, on the roads from the valley of the great Kara Kul and Rang Kul to the valley of the Muji. All three passes are suitable for pack transport and are accessible for laden horses and camels. They are difficult only on account of the elevation.
- 8 and 9. The Ak Bardi (14,100') and Chon Kotai, on the roads from Rang Kul to Bulun Kul. Caravans, going from the Great Pamir to Kashgar, in winter, use the the Chon Kotai pass. In order to convert it into a cart road, it would only be necessary to prepare a short distance of the ascent from the western side, and about $\frac{2}{3}$ mile of the descent on the other side. The Ak Bardi is easy for laden animals on the eastern, but very steep on the western side.
- 10, 11, 12 and 13. The Kum Jilga, Tokh Terek (15,400'), Jol Kok Terek, and Muzkuru, on the roads from Rang Kul to the Little Kara Kul and Subashi. The Tokh Terek is easy.
14. Sari Tash—on the road from Rang Kul to the Chinese post of Kara Su.
15. Kulma Kara Su—on the road from Murghab (Pamir Post) to the Kara Su post; this pass is consi-

dered most accessible, and is passable almost the whole year round. In winter, trade caravans pass through it from Wakhan and Badakshan to Yarkand.

16 and 17. Tusakchi (Kaindi) and Bardish—on the roads from Murghab to the Tagharma valley. Both passes are open almost all the winter. The Tusakchi pass has a steep, rocky summit; yaks are necessary for the ascent from Tagharma.

18, 19, 20, 21 and 22. The Chashman, Dun Keldik, Okshirak, Neza Tash or Shindi (called by the natives Shingan) and Khan Uli—on the roads from the Aksu valley to the Tash Kurghan and Taghdumbash valleys. The height of the Neza Tash is 14,900 feet. In autumn, when the rivers are low, this pass is used by caravans going to Yarkand and Yangi Hisar. In summer the pass is not convenient, owing to the difficulty of the narrow rocky channel of the Shingan. The other passes from the valley of the Aksu are not very accessible, and are seldom used.

23. The Sarikoram, or Pistan pass, is similar to the above, and leads from the source of the Aksu to the village of Dabdar (Dehda).

24. The Beyik pass (15,078'), on the road from Aktash to the valley of the Karachukar. The ascent from the valley of the Aksu is so easy and convenient that it is suitable without any preparation for the movement of wheeled artillery. The descent into the valley of the Karachukar is not difficult, but is somewhat rocky; in general, the Beyik is one of the most convenient and accessible passes in the range.

West of the Beyik there are four more passes, the Tegerman Su, Kipchak, Mihman Yoli and Mukturuk (or Kara Jilga). They are all very high and difficult.

All the above-mentioned passes of the Sarikol range are passable for horses and camels during the summer months, from June to the end of September. The first to be covered with snow are the southern passes—the Beyik, Tegerman Su, and Mihman Yoli. On the Beyik, sometimes as early as September, snow falls waist deep. In October, the southern passes are closed, and they do not open again earlier than the end of May.

The northern passes, from the Kara Art to the Ak Bardi are closed for a short time in winter, but, because of their great height and consequently rarefied atmosphere, they are seldom used. The most convenient are the Chon Kotai, Kulma, and Bardish.

THE KARAKORAM RANGE.

The Karakoram forms the south-western part of the outer bow of the Kashgarian mountain girdle. Its chief range, the high snow-covered chain of the Mustagh, extends, to the south east, from the sources of the Karachukar, Hunza, and Wakhji rivers, forming the watershed between the basins of the upper Indus and the Raskam river (the upper waters of the Yarkand river), and at the same time the frontier of Kashgaria with Hunza and Kashmir. In its central section (between 75° and 77° E), the Mustagh is a gigantic mass of mountains with an average height of about 20,000 feet, covered with glaciers; many of its peaks reach a height of from 24,000 to 26,000 feet. The four peaks in the Gusherbrum group have a height of over 26,000 feet, and peak K-2, or Dapsang, reaches a height of 28,250 feet, and thus appears second only to Mount Everest in the whole world. To the east of the 77th meridian, the Mustagh, having thrown out the high snow-covered Sasar range, which forms the watershed between the Sheok and Nubra rivers, separates into several broad branches which, gradually becoming lower, merge into the high mountain plains of north-western Tibet. Between these branches, lies a series of broad, flat, and desert valleys, the Chang Chenmo, Lingzi Thang, Aksai Chin, and Ak Tagh, sloping gently towards the north west. The absolute height of these valleys lies between 17,100 and 17,300 feet. Towards Kashgaria, the Mustagh throws out several spurs.

The Aghil Range.—At the source of the Mustagh, there starts, in a north-westerly direction, the Aghil range, which extends for about 130 miles along the right bank of the Mustagh, a tributary of the Raskam river. Its height is little less than that of the main range. Near its point of junction with the main range, the Aghil has some enormous glaciers and almost perpendicular peaks, with a height of about 24,000 feet. It is utterly devoid of vegetation other than grass. It is crossed by the Aghil pass (15,300'), which is remarkably easy.

Near Mount Godwin Austen, the Mustagh throws out several spurs which fill the area between the Raskam river and its left bank tributaries. To the east of the Karakoram pass, the Mustagh unites, by one of its spurs, with a southern spur of the Kuen Lun range.

The northern slopes of the Karakoram are steep, and in their upper zone completely bare. In their central zone, at the bottom of the lateral valleys, are seen small patches of grass and clumps of small bushes. In the lowest parts of these valleys, near their exit into the Raskam valley, some grass is to be found, there are extensive groves of bushes and poplars, and sometimes, apricot trees.

Towards Ladakh and Baltistan, the Karakoram throws out a number of high, snow-covered spurs. The most important of these is the Sasar, which starts in a south-easterly direction from the source of the Nubra river, and crosses the most important caravan routes from Kashgaria to Leh.

The southern slopes of the Karakoram are long and steep; their valleys differ from those of the northern slopes by their greater abundance and variety of vegetation; at the heads of the valleys are excellent pasturages, and the lower valleys of the Nubra and Sheok are covered with flourishing villages, gardens, and cultivated fields.

Passes:—The Karakoram range lies across the roads from Kashgaria to Kashmir and Hunza. The roads into Hunza cross the watershed of the Karakoram by six passes:—

- (1) The Kilik (15,600'). This is an easy pass with a gradual ascent and descent. In summer, it is the easiest pass towards Hunza, but, in spring, autumn and winter, the Mintaka is preferred, owing to its comparative freedom from snow.
- (2) The Gul Khwaja Uwin is more difficult than either the Kilik or the Mintaka, and is now seldom used.
- (3) The Mintaka (15,400') has a steep ascent and descent near the top, which is bad going over boulders. It is practicable for laden yaks but not for laden ponies.
- (4) The Kharchanai is steep and difficult on the north but easy on the south.

(5) The Khunjerab (15,420') is easy near the top, but, a few miles down the Hunza side, the road becomes very narrow, stony, and difficult.

(6) The Shingshal (14,719'), leading from the Raskam to the Hunza valley. It presents no difficulties in itself but, for some 10 miles on the Hunza side, the road is very difficult and impracticable for laden animals.

Of these, the first five lead from the Karachukar valley to the Hunza valley. From the beginning of November to the beginning of April, and in some years even to the middle of May, these passes are covered with deep snow; the winter communication between Sariqol and Hunza is carried on, only by men on foot, through the Mintaka pass. During the remainder of the year the passes are free from snow and can be crossed by horses and camels. During summer the rivers rise and become difficult to ford, and consequently the passes are most accessible in the autumn before the snow falls.

On the roads from Kashgaria to Baltistan and Ladakh are the following passes :—

(1) The Mutagh (19,000') leading from the valley of the Raskam (near its junction with the Bazar Dera), to the town of Skardu in Baltistan. The road across the pass runs for a considerable distance along an enormous glacier and is very dangerous. Formerly it was occasionally used by the Ladakhis when returning from Yarkand. At present, it is impassable, probably on account of the movement of the glaciers, and the appearance of cracks in their surface.

(2) The Chorbut (19,000'), leading from the valley of the Khafaliang to the valley of the Nubra, is at present impracticable. Formerly the Ladakh merchants occasionally used it for laden coolies, it being impassable for laden animals.

(3) The Karakoram (18,317') lies on the most important road from Kashgaria to Leh, the chief town of Ladakh. On the northern side there is a steep descent for 500 feet, by a zigzag track on rocky débris of the consistency of gravel. The approach from the south is long and gradual until, close up to the

pass, there is a sudden ascent of 300 or 400 feet up a narrow tortuous track. Notwithstanding its considerable elevation this pass is easier than those lying north and south of it on the same road—the Kilian and Sasar passes—its slopes are gentle, there are no glaciers and in summer it is free from snow. It is nearly always open, and is passable for laden horses throughout.

In the eastern branches of the Karakoram, are the Kara Tagh, Kompas La, Pangtung, Changlung Barma, and Changlung Yokma passes, which are crossed by the eastern roads from Shahidulla to Leh. These passes are easily accessible, have gentle slopes and no glaciers, although their height is from 17,500 to 19,000 feet. They are, however, little used in consequence of their enormous height, low temperature, and the lack of pasture and water in their valleys. In the Sasar, a southern spur of the Karakoram, are the high and very difficult passes of Sasar (17,500') and Karaul Dawan (17,000'), which have steep, rocky slopes covered with glaciers.

THE KUEN LUN RANGE.

The Kuen Lun extend from the Pamirs to the shores of the Pacific Ocean. The western section, from the source of the Markan Su to the latitude of Polu, is an uninterrupted, snow-covered range, with a broad belt of lateral ridges. The breadth of the system at the longitude of Yarkand is 130 miles. In the section from Polu to the meridian of Lop Nor the Kuen Lun does not consist of a single range with foothills, but of several ranges, separately by narrow longitudinal valleys. At the narrowest part, opposite Nia, the Kuen Lun consists of several narrow ranges, rising to a height of from 13,000 to 24,000 feet, and very steep towards the south, on the Tibetan side.

To the east of the exit of the Charchan river, the Kuen Lun consists of several separate ranges, parallel or divergent, and, for the most part, snow covered.

It is only necessary here to deal with that portion of the Kuen Lun lying within Sinkiang the western Kuen Lun.

The Kashgarian Mountains.—In the north-western portion of the western Kuen Lun, which lies to the north of the Yarkand river, after the latter bends to the east, this range has received the name of the Kashgarian mountains.

The Muztagh Ata.—The chief part of the Kashgarian mountains is the magnificent group of the Muztagh Ata, which is divided into two parts by the deep ravines of the Ike Bel Su. The southern of the two chief peaks, called the Muztagh Ata or Tagharma, has a height of 24,231 feet, and is covered with glaciers, while there are many other peaks above 20,000 feet. The whole of the group forms an enormous, precipitous mass, very steep towards the east and west, and with many large glaciers.

The north-western prolongation of this group is a high, snow-covered chain which, under the various local names of Kara Bokter, Buri Kuz, Ulug Art, and Keng Tau, extends to Muk Kurghan, where it unites with the spurs of the Trans-Alai and Sariqol ranges. As it recedes from the Gez defile, it becomes considerably lower; the Ulug Art pass lies at a height of 16,890 feet, and the Ayak Art at a height of 12,215 feet. The narrow, precipitous summit of the range forms a line with a few irregular breaks. On the south-west, towards the Muji and Kiyak Bashi rivers, the range slopes down steeply without forming any spurs; on the north-west it throws out a number of long, rocky spurs. To the south along the left bank of the Gez river, extends the high rocky chain called Bektargak or Ala Archa, whose highest peaks are the Jak, Tanimas, and Boz Unkur. Along the right bank of the Gez is the high, and at first snow-covered, chain, called Yalpak Tash, Kul Yailak or Kupruk Tagh, which reaches its greatest height in the peaks of Yalpak Tash and Igar Tash. This chain forms the watershed between the rivers Gez and Kara Tash.

The Uzun Kir.—From the central group of the Muztagh Ata, there extends to the east the Uzun Kir range. On the north-east and south-east, the Uzun Kir throws out a number of long, steep spurs. The branches of the Uzun Kir or Kizil Tagh end before reaching the Yarkand—Yangi Hissar road; only the most northerly of the spurs, which crosses the road by the low, but rocky, Kairak ridge, unites with the clay hills to the east of the road.

The Sari Kir.—The chief range of the western Kuen Lun in the Kashgarian hills is the Sari Kir.

The Darshart.—West of the Sari Kir runs the Darshart range, the southern continuation of which, the Aphrosiab or Juliar hills, joins the Muztagh Ata to the Mustagh, the chief

range of the Karakoram. All the numerous spurs of the Muztagh Ata have practically the same characteristics. At their eastern end, in the Uzun Kir, Sari Kir, and Darshart ranges, they have an average height of about 15,000 feet, above which individual peaks rise to a height of over 20,000 feet. Towards the east and north-east, the hills become lower, ending in small ridges in the neighbourhood of the Yarkand—Yangi Hissar roads. All the hills have steep rocky summits; below the wild broken rocks of the summit, extend *yailaki*—broad flat terraces—which in spring and early summer, are covered with excellent pasturage; still lower, there are again rocky precipices intersected by gullies and lateral ravines. Towards the east, the terraces become narrower and disappear, changing into sterile rocks.

Passes.—Notwithstanding the considerable height of the ranges and the steepness of their slopes, the Kashgarian mountains are remarkable for their great accessibility compared with the other parts of the Kuen Lun range. They are passable for pack transport by several roads leading from Bulun Kul to Kashgar. The best of these is through the Gez defile which penetrates the whole width of the hills. On this road, if we except a few crossings over jutting spurs, there is not a single pass, but unfortunately, movement by it in summer is very difficult in consequence of the rapidity and great depths of the Gez river, and a detour over the Tokus Dawan or 9 passes has to be made. Another good route leads, *viâ* Tash Kurghan, the Chichiklik, Terart and Kashka Su passes, to Ighiz Yar and Yangi Hisar.

The following are the most important passes in the Kashgarian mountains:—

1. In the north-western part of these hills are the Ayak Art, Min Teke, Kazigart, Ulug Art, and Buri Kuz passes.

The Ayak Art (12,200') is on the road from the Pamirs to Kashgar by Muk Kurghan and Opal. This pass is open all the year round, and is very convenient for pack transport, but in summer it is not used, because at that season the crossings over the Markan Su, which flows to the westwards of it, are very dangerous.

The Ulug Art (17,000'), on the road from the valley of the Muji to Opal, is open only for two months—from the middle of June to the middle of August—and only in the most favourable

years. The surface is rocky and the steepness of the slopes is considerable, in places as much as 35° . This pass is used at the time of high water in the Gez river.

The Min Teke and Kazigart are on very difficult tracks known only by the local Kirghiz.

2. The Kara Tash (16,500') and Ghijak passes are on the road from the valley of the Little Kara Kul to the town of Yangi Hisar. The Kara Tash, which lies in the central and lower part of the Muztagh Ata, is open for a short time in the middle of summer; its height and the steepness of its slopes make it one of the most difficult passes in the Kashgarian hills. The ascent from the side of Kara Kul is especially difficult, being covered with rubbish and fragments of rocks.

The Ghijak (13,190') has a soft surface, but it is very steep—in places as much as 50° . For the carriage of loads yaks are necessary.

3. The Kok Mainak (15,635'), Yangi Dawan (15,990'), Yam Bulak, Chichiklik (or Sari Tash Mainak) (about 15,000'), Terart (Torat) (13,330'), Kashka Su (13,023'), Kara Dawan (9,590'), and Kizil Dawan (10,480') passes, in the Darshart, Sari Kir and Uzun Kir ranges, are on the roads from Tash Kurghan to Yarkand and Yangi Hisar.

The first two passes, notwithstanding their considerable height, are fairly convenient for pack transport; their slopes are soft and not very steep. They open in the end of May and do not close before the end of September. These passes are used when the road from Tash Kurghan by the Shindi and Tangi defiles is impassable on account of the depth of the water. The Kok Mainak is easy on the east, but difficult for ponies on the west. To the north of the Kok Mainak, is the Yam Bulak pass. The going here is good, except on the pass itself, which is very difficult for laden ponies, as the track crosses a mass of boulders. It is seldom used owing to its greater length and difficulty. The Chichiklik pass has a gradual ascent on the east, a level, snowy stretch on top, and a rough, stony descent on the west side. One of the most serious obstacles on this route is the extremely difficult Tangitar defile. This becomes impassable every afternoon so long as a snow remains on the lower ranges. It can be avoided by taking the route *via* the Yam Bulak pass which necessitates an extra march.

The remaining passes of this group are open almost the whole year round.

The Terart (Torat) has a narrow, rocky summit; the western slopes of the pass are in places steep and rocky; the eastern are gentle and covered with grass.

On the Kashka Su, the southern slope is a fairly serious obstacle, as in places there are steep zigzags and narrow gullies. The summit of the Kashka Su is rounded, and the northern slope is a terrace with soft, grassy surface; there is a steep drop only at the end, at the descent into the valley of the Kinkol river.

The ascent to the Kara pass from the Tash Kurghan side is by zigzags over a narrow summit, between two deep ravines. The descent from the pass is gentle, and the surface soft. The Kizil pass, on the contrary, has a gentle and soft ascent, and a fairly steep descent towards Yarkand, but, on the whole, neither pass is a serious obstacle for pack transport.

The Aphrosiab Range.—South-west of the Kashgarian hills, the ground plan of the Kuen Lun is even more intricate. In prolongation of the Darshart range to the south, from the ravine of the Tash Kurghan river, is the Aphrosiab range which has various local names—Torteich, Juliar, Muz Maidan, Tagash, etc.

Passes.—This range is crossed by the following passes:—

- (1) From the Vacha to the Tashkurghan valleys; the Sekkik (Khar Khyr), Ugariat and Kheranish passes. Of these, the Ugariat is the best.
- (2) From the Vacha to the Mariong valley; the Thung (14,200') and Pichanyart (13,600'). The former is easy on the north, but difficult on the south side, though it is practicable for laden animals.
- (3) From Raskam to the Taghdumbash Pamir; the Zangar, Ilisu or Kurbu (16,750') and the Oprang passes. Of these, the Ilisu is the best, but is only practicable by laden yaks, its difficulty being much enhanced by the Ilisu river, which is always a serious obstacle and is impracticable, as soon as the snow begins to melt, in summer.

The Khandar Range.—The Sari Kir, the chief range of the Western Kuen Lun, is prolonged to the south of the Tash

Kurghan river by the high precipitous Khandar or Tangi Kul range, which forms the watershed between the Vacha and Raskam rivers.

This range, with the Aphrosiab range, encloses the valley of the Vacha, one of the most fruitful valleys of the western Kuen Lun. From the Pichanyart pass to Langar, the first Tajik village, the valley resembles one in the high Alps. From Langar the valley widens to $\frac{2}{3}$ mile and its height falls to 10,500 feet; Tajik villages, fields of barley, willows, and little turf covered plots appear. From the village of Teng Ab, the valley narrows into a wild ravine with perpendicular sides, and, near the village of Torbush, it again widens out to 500 yards, keeping this breadth to the village of Baldir; here again appear villages, barley fields, meadows, willows, and in places thick groves of hawthorn and white vines.

In the valleys of the eastern slope of the Khandar, which are at a lower elevation than the valley of the Vacha, small groves of birch, willow, wild rose, and juniper are frequently met with; in the fields, wheat, barley, peas and melons, and in the gardens of the villages, apricots walnuts and apples grow freely.

Passes.—The Khandar range is crossed by the Yamantars, Bulakin and Khandar passes. These have steep slopes and precipitous summits. From November till the end of May they are covered with deep snow and the passage is only feasible by yaks.

The Galioh or Chon Kir range.—On the right bank of the Yarkand river, south of its sharp bend to the east, the western Kuen Lun consists of three chief ranges, which unite in a knot of hills lying a little to the east of the Kukalung pass. The western of these ranges, the Galioh, appears to be a direct continuation of the Khandar range.

Of a similar nature is the Takhta Kuram, the second main range, which, in its northern part, has a height of about 12,000 feet; further on, it rises rapidly and, at the source of the Chop, it is much higher than the Galioh. Its passes are at a height of not less than 17,000 feet and some of its summits reach a height of 20,000 feet.

From the knot of hills near the Kukalung pass, where both these ranges unite, the main range of the western Kuen Lun extends in a single, high, snow-covered mass eastwards towards

the Yangi Dawan pass, separating the basin of the Tiznaf from the right hand tributaries of the Raskam. The average height of this inaccessible ridge is more than 17,000 feet, considerably above the height of the snow-line in the western Kuen Lun.

East of the Yangi Dawan, the Kuen Lun system consists of three parallel ranges. The southern extends to Shahidulla and further to the east, along the right bank of the Kara Kash to lake Achik Kul, where it merges into the highland plain of north-western Tibet.

The Kharangu Tagh,—which fills the area between the Kara Kash and Yurung Kash rivers, is a precipitous and impassable mass. The summits of the ranges have an elevation of about 20,000 feet. To the north of these hills is the Kilian range, which, starting from the same knot of hills near the Yangi Dawan and extending along the left bank of the Kara Kash, ends in the Dua hills near Khotan.

The Kara Tash Tagh.—On the right bank of the Yurung Kash, there extends to the east, towards the source of the river Keriya, the high, snow-covered Kara Tash Tagh, which the disused road from Polu to Ladakh crosses by the At To (Gubolik, Subash or Art Davan) pass. Somewhat to the east of this pass, the Kara Tash Tagh unites with the Keriya Mountains, the eastern branch of the Kharangu Tagh. North of the western end of the Kara Tash Tagh, lie the parallel ranges Tokelik Tagh and Anasvai Tagh.

Towards its eastern end the Kuen Lun system becomes narrower, and at the meridian of Polu, it consists of only two ranges which are close to one another.

All the mountain chains described above are snow-covered ranges, whose height increases towards the east. In the mountainous mass between the Kukalung and Yangi passes, there are peaks with a height of 23,000 feet, and, at the sources of the Yurung Kash and Keriya rivers, in the eastern part of the Kharangu Tagh and Kara Tash Tagh, most of the peaks reach a height of 20,000 feet. The average height of the passes in this portion of the Kuen Lun is between 17,000 and 18,000 feet.

The southern foot of the Kuen Lun is marked by the deep longitudinal valleys of the rivers Raskam, Kara Kash, and Yurung Kash. The northern slopes of the range are gentle and the difference between the elevation of the summit and the foot of the range is considerably less on this side. Towards

the Kashgarian plains, it throws out numerous long spurs which form a broad, hilly country, of a very complicated nature, to the west of the meridian of Yarkand. Here the Takhta Kuram gives out numerous spurs, filling the basin of the Tiznaf. The hills of the Tiznaf basin are distinguished by the extreme variety of the lengths of their ranges, their greater number, their sharp summits and their steep sides. In most cases, the hills are called after the names of the neighbouring passes and villages, or the streams flowing from them.

At the sources of the Tiznaf and its tributaries, the hills have almost the same height as the main range of the Kuen Lun; as the distance from the main range increases, the hills become lower, ending, near the oases of the plains, in rows of low sandy mounds. The valleys lying between them are deep, winding and steep. At their heads, they branch out into a number of still narrower and deeper ravines and gullies with perpendicular sides.

Owing to the nature of the ranges and valleys, the hills of the Tiznaf basin are very inaccessible, and present a locality very interesting as regards the inhabitants, who have preserved, in their language and manner of life, many aboriginal features.

East of the meridian of Yarkand, the spurs project perpendicularly from the main range and are separated by deep valleys. Gradually decreasing in height towards the north, they end, near the Yarkand—Khotan road, in broad plateaux studded with separate ridges of conglomerate and mounds of loess, between which are wide, stone-strewn plains. Between Khotan and Polu, the hills, for a considerable distance, do not reach Khotan—Keriya road. From the foot hills almost up to the road, the stretch sterile plains.

The southern side of the Kuen Lun has wild and generally bare slopes. On the northern slopes, the vegetation is considerably richer. In the upper zones, below the precipitous summit and the snow girdle (at a height of from 9,500 to 12,500 feet), are luxuriant alpine meadows which are specially rich in the basin of the Tiznaf. In these hills, below the alpine meadows, in the deep ravines sheltered from the sun, are found groves of pine trees, junipers, mountain ash, and willow; on the more open spots in the bottom of the valley, grow lucerne and sweet willow; then appear fields of barley, and, at the exits of the valleys, are inhabited villages, fields and gardens. In the mouths of the Tiznaf, Kilian, Sanju, Khotan, and Keriya rivers there have long been cultivation and inhabited villages.

Passes.—The most important passes on the road from the Kashgar basin to Ladakh lie in this section of the western Kuen Lun.

They are, from west to east,—

(1) *The Sandal pass* (15,300'), on the road *via* the Azgar Sai, Kulan Urgi and upper Raskam valley.

(2) *The Topa pass* on the same route.

(3) *The Kukalung pass* (15,350'), in the southern main range, on the road from Karghalik to the valley of the Raskam. The ascent from the north, out of the valley of the Kulian Arik, runs through a steep, rocky defile. On the summit of the pass is a glacier which feeds the Malgum Bashi, a tributary of the Bazar Dara. The descent into the valley of the Raskam is also steep and rocky. Grombchevski, who crossed it in November 1889, describes it as "smooth, sloping and not difficult." Deasy—December 1897—says it is "not difficult when free from ice."

(4) *The Takhta Kuram* (17,714'), on the same road, in the Takhta Kuram range. The ascent at first is on a soft clay soil, which, at the height of 14,000 feet, changes to rocky debris; after this, come broad flats covered with large boulders. The sharp rocky summit of the pass consists of loose granite with a slope of 40°, below which is a gentle descent to the Kulian Arik. In summer, in consequence of the steep and open nature of the summit, the pass is free from snow.

(5) *The Chiragh Saldi* (13,022') leads from Mazar Khoja to the Raskam valley, over the southern end of the Takhta Kuram range. It is fairly easy.

(6) *The Yangi Dawan* (15,800'), in the same range, is on the winter caravan road from Kashgaria to Ladakh. The road up to the pass, although steep, is well constructed and is suitable for lightly laden camels. The descent into the valley of the Raskam runs at first through a gently sloping valley, then through a wide ravine with a soft surface, and, finally, along the steep rocky bed of a river in a narrow defile. There are no glaciers. This pass is open for three months in the year, from August to November.

(7) *The Ishak Art* (12,500') is a steep and rocky pass in one of the northern spurs of the Takhta Kuram, on the road from Kugiar to Bazar Dara in the Raskam valley. Owing to the

great steepness of the eastern slope horses have to be lowered down by ropes in two places.

(8) *The Ak Koram or Tupa pass* (10,335') is on a spur of the main range, on the winter road to Ladakh. The ascent on the north is gentle and soft, but near the summit it is steep. The descent on the south is at first easy and soft, then the road goes along a narrow ravine which is encumbered with debris of old white chalk. The pass is open all the year round.

(9) *The Kilik pass* (17,500') is in the Kilian range on the road from Kugiar to Shahidulla. The pass is steep, rocky and difficult of access, especially in summer in consequence of the rapid current and great rise of water in the river Togra Su.

(10) *The Kilian pass* (17,123'), in the same range, is on the chief summer caravan route from Kashgaria to Ladakh. It is very difficult and steep. Laden ponies can cross only with difficulty. This pass is generally used in summer, as the rise of water in the river Kilian Su is not very high.

(11) *The Sanju pass* (16,650') is in the same range, on the road from Khotan to Shahidulla. This pass, although lower than the Kilian, is one of the most serious obstacles on the roads from Kashgaria to Ladakh. The ascent from the Khotan side is at first fairly gentle and soft, but the last third is very steep, rocky and often encumbered by avalanches. On the summit of the Sanju are glaciers. The descent is at first down a steep slope covered with ice and stones. At the bottom of the descent is the narrow, rocky Tar Boguz gully. The pass is hardly ever free from snow and is difficult for laden horses; yaks are generally employed. The Sanju pass is used only in summer.

(12) *The Sokh Bulak pass* (16,165') is on the southern spur of the Kuen Lun which unites it with the Karakoram. Across this pass runs the road from Shahidulla to the Raskam valley. On the east, it is gradual and easy; on the west, very steep for 600 yards, surface stony, and going difficult.

(13) *The Suget pass* (17,610'), on the same spur, is on the summer caravan road to Ladakh. The northern side of the pass is fairly steep, the southern gradually merges into the broad Ak Tagh valley. Snow lies on it from September to April. The pass is open for four to five months. Yaks are better than horses for the ascent owing to the height of the pass.

(14) The *Kavak or Pur Tash* (16,562') is on the same spur, on the road from Khotan to Ladakh (*via* the Hindutagh pass). This pass is similar to the Suget pass.

(15) The *Hindutagh pass* (17,349') is in the Kharangu Tagh range, on the road from Khotan to Ladakh by the defiles of the Yurung Kash and Nisa rivers. This pass is accessible only by pedestrians. On its summit is a glacier which is covered with crevices and is extremely steep.

The great valley of Pusha, to which this pass gives access, possesses extensive grazing grounds with an abundance of vegetation.

(16) The *Yangi or Ilchi pass* (19,092'), in the same range, is on the road from Khotan to Ladakh *via* the Aksai Chin and Lingzi Thang. It is only crossed with the utmost difficulty by expert mountaineers. It is open only from June to August.

(17) The *Naia Khan pass* (18,659'), on the same road, is in the northern spur of the Kharangu Tagh. It is very steep on both sides, very rocky, and covered with ice. It also is open only from June to August.

(18) The *Kizil pass* (17,094') is in the eastern prolongation of the Kharangu Tagh, on the Polu—Baba Hatun road. There is a steep climb of 1 mile on the south side of the summit. On the north there is a gradual descent for 3 miles down a winding ravine; the road is good but stony. On the whole, this has very gentle slopes and is quite accessible for laden animals.

(19) The *At To* (Art Davan) *pass* (16,600') is in the Kara Tash Tagh. The ascent to the At To, by the narrow rocky defile of the Kurab (a tributary of the Keriya river), is fairly gentle, but the descent is short and steep.

The Central Kuen Lun.

To the east of the exit of the Keriya river, the frontier range of the Kuen Lun extends as far as the meridian of the western end of Lop Nor, whence it turns to the east and finally passes out of Sinkiang territory. To the south of it, are other ranges which bound the row of high terraces of the Tibetan highlands which gradually become lower on the north-east towards Lop Nor. The frontier range is broken through in many places by rivers flowing from the hill valleys lying behind it, and

consists of three ranges, the Russian, Tokus Dawan, and Altyn Tagh.

The Russian Range.—That portion of the frontier range lying between the Keriya and the Kara Muren rivers was named by Prjevalski the "Russian range"; by the natives of Kashgaria it is known under the name of the Akkar Chakyl or the Astyn Tagh. Between the Keriya and the Bostan Tugrak rivers, the Russian range is a high snow-covered mass with a sharply defined, rocky, serrated summit. Its peaks, Arka Tagh (or Akka Tagh), Ak Kar Chakyl Tagh, and Ak Tagh, are more than 20,000 feet high and Lushi Tagh, which was renamed Mount Tzar Liberator by Prjevalski, is more than 21,000 feet high. To the east of the Akka Tagh, the range becomes considerably lower, its summit coming below the snowline, which here, on its southern slopes, lies at a height of from 18,500 to 19,000 feet; to the east of the Bostan Tugrak, the snow cap disappears, or appears only in places in small patches.

The northern slopes of the Russian range, between the Keriya and the Bostan Tugrak, are steep; below the foot of the range, which is not more than 9,500 feet above sea level, there extend to a width of from 14 to 16 miles, foot hills intersected by narrow valleys and deep ravines. In the foothills are seen clumps of mountain pine, wormwood grows in abundance, and there is excellent pasturage. The foothills, in their turn, descend steeply to the sterile rocky *sai* which extends along the Keriya road. To the east of the Bostan Tugrak, the range, becoming lower and broader, merges gradually into the northern foothills by low, gently sloping ridges separated by small valleys; at the same time, the foothills become lower and their slope towards the adjoining *sai* becomes slighter. The south-eastern slopes of the range, towards the deep valleys of the Tibetan highlands, are very steep.

The Tokus Dawan Range.—From the Kara Muren, the frontier range, under the name of the Tokus Dawan, extends north-east to the Charchan river, and thence east into the Tibetan highlands. The Tokus Dawan is a narrow, snow-covered mass which slopes steeply on the north-west. Its southern slopes have so far been little explored. The northern foothills become lower as the distance from the Kara Muren increases, and, between the villages of Salkyneh and Achian, they have a height of 9,000 feet; at a short distance from the foot of the

range, the foothills end with a steep slope to the north. East of Achian, the northern slope becomes still more steep; the snow-covered Tokus Davan mountains get closer to their foothills, and the ravines perpendicular to the range become deeper, so that movement along the foot of the range becomes very difficult. The southern slopes of the range remain, as before, steep.

The Altyn Tagh or Astyn Tagh.—East of the Charchan river, the frontier range is called the Astyn Tagh (Lower Range), or the Altyn Tagh (Golden Range). Beginning from the Charchan river with a gentle slope, the range gradually rises and, at a distance of about 40 miles to the north-east of the Chuka pass, there are snow-capped peaks; further to the north-east, the range is somewhat lower but at the meridian of Karachukar, it rises rapidly, forming the high Sulan Tagh group, which consists of closely-joined, snow-covered hills and magnificent glaciers. The highest peaks of this group, have a height of 19,170 feet and the snowline, on its south-western slope, lies at a height of 18,500 feet. Beyond the Sulan Tagh, the Altyn Tagh loses its snow cap, and bending to the east from the Tash pass, it extends into China Proper under the name of the Anembar Ula and Sie Shan.

In its western part, at the road through the Chuka pass the range has a width of about 20 miles; to the east, it becomes broader, and, at the meridian of Lop Nor, it has a width of 26 miles. Near the summit the slopes of the range are almost everywhere similar on both sides, but in the whole extent of the range, the northern slopes are longer than the southern, which are cut off sharply towards the terraces of the Tibetan highlands lying behind them.

On the north-west, the Altyn Tagh descends by terraces which in places are bounded by sharply protruding summits. Its foothills, consisting of sterile and rocky *sai*, slowly descend to the lower lying desert of rocks and sand, which extends to the banks of the Charchan and Lop Nor. Towards this plain, the foothills of the Altyn Tagh fall away by short, sharply defined salients, are covered by sand drifts and separated by the deep narrow ravines of the rivers and streams which flow from the slopes of the range. In the bottoms of the ravines, small groves of poplar, reeds, and various bushes are met with; in the upper zones, there are occasional patches of scanty wormwood. With the exceptions of the Charkhlik and Jakhan

Sai which, starting on the southern slope, break through the range in a northerly direction, most of the rivers flow from the northern and north-western slopes of the Altyn Tagh.

Passes.—Access from the Kashgarian basin to the high upland valleys of Tibet is only possible along the ravines of the rivers which separate the main ranges, and by a few passes in them.

In the Russian range, between the rivers Keriya and Tolan Khoja, there is not a single pass suitable for laden animals; in this section the range is accessible only in a few places and by pedestrians. In the central part of the range, are the Urulyat and Kosh Lash passes, on the road from Karasai to the valley of the Saryk Tuz. Both passes are fairly steep, but are practicable for laden camels. From Karasai there is a bridle path along the valley of the Bostan Tugrak to Otlyk-Bulak, which is quite suitable for camels. In the eastern end of the range, are the passes Dalai Kurghan Art (14,400'), Sarykol (13,760'), and Pelaslyk, on the roads from Dalai Kurghan and Kopa to the pastures at the heads of the Mit and Kara Muren valleys. The first two have soft, gentle slopes, covered with grass; the third has a rocky summit, which is accessible for horses, but with great difficulty.

The Tokus Davan is impassable in its whole extent. In the space between it and the Altyn Tagh, along the valley of the Charchan, there is a bridle path from Achian to Mandalyk which is passable for camels, but difficult on account of the numerous ascents over short spurs, which are separated by deep and steep ravines.

In the Altyn Tagh there are four passes—

(1) *The Chuka pass* (9,530'), in the south-western end of the range, on the road from Charchan to Mandalyk, quite suitable for camels.

(2) *The Khadalyk*, about 20 miles to the east of the Chuka pass on the same road; this pass is negotiable only by horsemen in single file, and with difficulty.

(3) *The Tash pass* (13,000'), on the road from Lop Nor to Tsaidam. The ascent from the north is by short, steep, zigzags along a narrow valley with a stony surface. The descent has a slope of as much as 30° and, consequently, the pass is only accessible for loaded animals by means of zigzags. On

the northern side of the chief pass lies another, the lower but steep Tum Boen pass, situated on a spur of the Altyn Tagh.

(4) *The Kurghan pass* (11,100') on the road from Lop Nor to Tsaidam. The ascent from the north is by a narrow ravine, the descent is almost imperceptible; the pass is suitable for camels.

The Altyn Tagh is not easily accessible by the valleys of the Charkhlik and Jakhan Sai because both these rivers flow through defiles with perpendicular sides. The numerous tracks in the frontier range of the Kuen Lun are used chiefly by the Tajik shepherds who spend most of the summer with their flocks on the southern slopes of the range, where there is good pasture; the tracks are also used by parties of miners going to the gold mines, which are scattered in the mountain valleys. The Tash pass is, sometimes used by Mongols going on a pilgrimage to Lhasa via Lop Nor and Tsaidam.

THE SARIQOL VALLEYS.

Towards the western and south-western frontier of Kashgaria, between the internal and external ranges of the mountain girdle, there are a series of upland valleys which form two groups—the Sariqol and Raskam valleys.

The Sariqol valleys, which lie between the Sariqol range and the huge Muztagh Ata, with its north-western and south-eastern spurs extend from the Kosh Bel pass on the north to the Wakhjir pass on the south. They are separated by the Ulug Rabat pass.

The Kiyak Bashi.—On the north, there extends to the south-east, from the Kosh Bel pass, the broad level valley of the Kiyak Bashi. The maximum width of the valley is 10 miles. Further on, the valley narrows down to a little over a mile. At Tarnung Bashi, where the Tumanchi, as it is now called, unites with the Bulun Su and forms the Gez river, the flat level valley is at an elevation of 10,500 feet and has a width of about $3\frac{1}{2}$ miles. From this point, the height of the valley increases to 12,500 feet near the foot of the Ulug Rabat pass. The breadth of the valley constantly changes, varying from $\frac{1}{4}$ mile near Urta Balghun to 2 miles south of the Subashi post. Bushes only exist in the shape of small groves of white vine; grazing is somewhat richer; on the banks of the rivers, grow reeds, grass and wormwood, and, on the slopes of the hills, a sort of

wild grass which gives excellent grazing. The grazing is especially good in the northern valleys, Kiyak Bashi and Muji, and the lateral valleys and ravines opening into them. Agriculture, in consequence of the considerable elevation of the locality and the severity of the winter, is impossible, or more probably, has not been attempted, as the Kirghiz who wander in these valleys employ themselves entirely in cattle-breeding. The Gez river, which drains this valley, is a tributary of the Kashgarian Kizil Su.

The Taghdumbash Pamir, Kara Su and Tagharma valleys. The southern valleys consist of the Kara Su and Tagharma valleys and the Taghdumbash Pamir. South of the Ulug Rabat there extends, at first, a series of small flat basins, which are separated from each other by low spurs from the opposite ranges. Near Gidjek the valley of the Kara Su suddenly widens out into the broad Tagharma valley, which has a length of about 8 miles and a width of about 4 miles.

In the north-western part of the valley is a rocky *sai*, in which small plots of fruitful ground with clumps of small reddish willows are occasionally met with; all the remainder of the valley is covered with fairly rich and varied vegetation, and small shrubs and thorn bushes of various kinds. There grows in the valley an abundance of various kinds of grass which forms excellent food for cattle; on the banks of the rivers are found willows, and also reeds in low, swampy spots. In summer the grass on the banks of the rivers and streams grows so tall that it can be mown with scythes, but according to the natives, it is not so nourishing as grass from the dry hill pastures. Notwithstanding its considerable elevation (about 10,500 feet), Tagharma, sheltered by the hills from sharp rough winds, splendidly watered, having an excellent soil and a temperate healthy climate, has long been inhabited.

The Tagharma valley is separated from the Tash Kurghan valley by a spur near Tangi. The width of the latter valley in its northern part, near Tash Kurghan, is about 4 miles, and its elevation is about 10,000 feet. The banks of the river and the small islands between its numerous channels are covered with thick meadow grass. Since 1900 the Chinese have begun to encourage tree-planting.

South of Dabdar (Dehda), the breadth of the valley narrows down to a little over a mile, it rises considerably, and, at Ujad-bai, it consists for the most part of sterile, rocky, and in places

sandy, desert. Grass is found only on the slopes of the hills, in the heads of the valleys and occasionally on the banks of the rivers. At Ujadbai, the Taghdumbash valley is a narrow ravine, with an elevation of 11,500 feet. South of this point, the valley widens out to a little over a mile, and, bending to the west, is called the Karachukar. The width and elevation of the latter increase towards the west. About 65 miles from Ujadbai, the valley ends in the narrow and rocky Wakhjir or Wakhijru ravine. The Karachukar valley is well watered and abounds in excellent pasturage on the slopes of the hills, and on the banks of the rivers, small brushwood is found.

Near Ujadbai, the broad Khunjerab valley joins the Karachukar. This valley is some 30 miles long, 4 to 6 miles broad, and its side valleys are full of Kirghiz tents and cattle.

The settled population of the Sariqol valleys is concentrated in the central part of the Tagharma and Tash Kurghan valleys, where there are nine Tajik villages and a few small hamlets which have lately sprung up. The nomad population—Kirghiz, to the number of about 150 families—is distributed in all the valleys, but is mostly to be found in the northern valleys of Bulun Kul, Tumanchi, Muji, and Kiyak Bashi. The settled inhabitants of Sariqol are employed in agriculture, producing wheat, barley, and peas, and, to a small extent, in cattle breeding; the Kirghiz are engaged only in cattle-breeding.

The Sariqol valleys are the only localities in the neighbourhood which are suitable for settled life, and are important chiefly on account of their position with reference to the countries bordering on Sinkiang. Situated in the south-western corner of the latter, where it marches with Russia, India, and Afghanistan, these valleys contain the best and most convenient road from Hunza, Badakhshan, and the Russian Pamirs to the chief towns of western Sinkiang, Kashgar Yarkand, and Yangi Hisar, and to this their strategic importance is due.

THE RASKAM VALLEY.

The Raskam valley is about 100 miles long. Its breadth, which, near the mouth of the Kogart stream, does not exceed 250 yards, gradually increases, and at the junction of the Raskam and Oprang rivers, it is 4 miles. From the bend of the river to the north-west, the valley narrows and changes into a narrow dark ravine with perpendicular sides. For the greater part

of its length the valley is level, only becoming undulating near Min Tube. The river flows between high, perpendicular banks, and winds from one side of the valley to the other. At the eastern end, at an elevation of 13,500 feet, it is covered with sand and small gravel. Small groves of willow and tamarisk, and little meadows with scanty pasturage are occasionally seen. In these places the trade caravans generally halt on their journeys between Kashgaria and Ladakh. Below Bazar Dara, where the elevation does not exceed 12,000 feet, the vegetation becomes richer and more varied, and thick groves of willow, mountain poplar and tamarisk are found, while in the narrow side valleys there is excellent grazing. Beginning at the mouth of the Azgar river, at a height of 10,500 feet, there are fields of barley, and lower down, lucerne and wheat. Snow, in the Raskam valley, falls extremely rarely, and rain hardly ever. The summer is dry and sultry, and the winter is severe. Communication between Raskam and Sarikol is carried on by the Ilisu or Kurbu pass (16,750'), the Shura pass (about 16,000') and the Oprang pass (16,500').

Communication between Raskam and Hunza is carried on by the Shingshal pass.

MAZAR TAGH HILLS.

Quite distinct from the mountain systems above described, are the Mazar Tagh hills, which lie in the middle of the Takla Makan desert and are of no military importance.

Within the mountain girdle, Kashgaria is a plain, sloping gently from west to east. On the line Kashgar-Yarkand, its elevation above the sea is about 4,000 feet (Kashgar 4,400', Yarkand 3,820'); at the extreme east, it decreases to 2,750 feet at Abdall. The plain consists of sandy deserts which occupy the greatest part of its area, stretches of forest, salt plains, marshes, *sai* and oases.

4. Rivers.

THE TARIM, OR YARKAND RIVER.

The chief river of Kashgaria is the Yarkand, or Tarim, as it is called below its junction with the Kashgar river. It takes its rise in the glaciers of the Karakoram range, near the pass of the same name, at a height of about 18,000 feet. After traversing the mountain girdle of south west Kashgaria and

the whole of the plain, it is lost in the reeds and swamps of lake Lop Nor about 1,250 miles from its source. By the end of December practically the whole of this extent is frozen. The basin of the Tarim occupies an area considerably greater than Kashgaria, since many of its tributaries take their rise outside the limits of the country in the unexplored provinces of the Tibetan highlands, and in the Russian provinces of Semerechensk and Ferghana. Owing to the great length of this river it will be convenient to deal with it in sections:—

(1) *From its Source to Karchun (where it enters the Kashgarian plains):—*

In its upper waters, before its junction with the river Chibra, the Yarkand, or Raskam river, as it is here called, is a rushing mountain torrent dashing down from the slopes of the Karakoram.

From the Misgan to Kosarab, the river, here called the Zarafshan, or gold-bearing river, flows in a narrow, dark gorge between high hills which fall away towards it in perpendicular precipices. Below Kosarab the gorge widens, but in places the cliffs project, making any movement along the banks very difficult. From Misgan to Karchun, movement is only possible in the winter months (December to February), when the river is covered with ice. In spring and autumn, movement along the banks is difficult, and during the summer high water (from June to September), it becomes quite impossible. The average breadth of the river in this section is from 80 to 95 yards, the depth at low water about 10 feet, and the velocity of the current about $1\frac{1}{2}$ feet a second; at high water which commences in May the depth of water is doubled.

Ferries.—Communication between the villages in the tributary ravines is carried on by means of ferry boats or *mussack* rafts, the latter are available at most villages, but are not kept in readiness and take some time to prepare.

Fords.—Most of this section of the river is quite unfordable during summer, but is fordable, not without difficulty, in many places in winter, even when it cannot be crossed on the ice. The principal fords are:—

- (a) Between the source of the river and Surukwat. Here the river is fordable almost everywhere in winter.

The average depth is from 2 to 3 feet and the average width of the stream is about 30 yards in winter.

(b) Near the mouth of the Ilisu river. The river is here crossed by an easy ford in winter. The stream runs in three branches.

(c) At Langar near the mouth of the Thung river.

(2) *From Karchun to Lailik.*

From the military point of view this is the most important section of the river as it forms an obstacle on the routes from Leh *via* the Karakoram pass and from the wealthy oases of southern Kashgaria to Yarkand and Kashgar. Here the road from Yarkand to Khotan crosses the river.

The country along the right bank from Yarkand to Merket is now opened up and is very fertile. On the left bank, as far as Lailik, it is desert, with the exception of a small strip 8 miles long between Yarkand and Tagarchi.

Ferries.—(a) The crossing at Painap is accomplished by fording, but baggage, small animals and foot passengers cross the main branch in boats. When the water rises in June, the passage at Painap, where there are no convenient places for wharves, is transferred about 5 miles lower down, to Tugarak; here the river flows in one stream with a breadth of about 370 yards. There are 12 ferry boats, flat bottomed, 40 feet long by 12 feet broad and capable of carrying 50 men or 16 horses each.

(b) There is another ferry between Lailik and Merket on the left and right bank of the river respectively. Here there are two large, flat-bottomed ferry boats capable of carrying 160 men standing, or two field guns. The breadth of the river is 60 yards during the cold weather, and nearly half a mile in the summer. The current is 2 miles an hour in the cold weather, but considerably more in the summer. The water is $4\frac{1}{2}$ feet deep early in April.

Fords.—In winter (from the beginning of December to the end of February) this section of the river can be crossed without hindrance at any point. In spring (March and April), when the water of the river is diverted into the irrigation canals, there are fords suitable for mounted men in many places along the river, but the chief crossing place is at Painap. Opposite

this village the river flows in a rocky, stony bed, with a breadth of about $1\frac{1}{4}$ miles. It has several branches, with a width of from 10 to 30 yards, and in places a depth of 6 feet. Both banks are open and steep, and about 5 feet high. On the right bank, opposite the crossing and distant about a mile from the river, on a second ridge, raised some 20 feet above the level of the river is the village of Painap, surrounded by fields and gardens. Beyond the village, at a distance of about $1\frac{1}{4}$ miles, is a third ridge which bounds on the south-east the valley of the right bank of the river.

(3) *From Lailik to the Junction of the Aksu river.*

This section of the river is of little military importance, except as far as Ala Aigyr, to which point the road from Yarkand to Maralbashi follows the left bank. From Ala Aigyr onwards, the bank of the river might be followed by a small force with pack transport moving from Yarkand to Aksu and wishing to avoid the main road.

Below Ala Aigyr the river throws off the Zaoke Su branch which joins the Kashgar river and is followed by the Yarkand-Maralbashi road.

Below this point the breadth of the main stream is about 90 yards, the depth at low water being 3 feet and, at high water, which takes place late in January, 14 feet, with a velocity of 6 feet a second. The banks average some 7 feet above the low water level. The river is liable to inundate the surrounding country in summer.

Ferries and Fords.—There are no ferries or fords of importance in this section.

(4) *Junction of the Aksu river to Karaul.*

The only military importance of this section of the river lies in the fact that it affords a route from Aksu to Karaul, on the road to Dural, and forms an obstacle on the caravan route from Khotan to Aksu. Below the junction of the Aksu river, it has a width of 180 yards with a depth, at low water, of 4 feet and a velocity of 4 feet per second. The main stream at Teres (near Shah Yar) is 160 yards broad in February, and as much as 700 in summer. Near Karaul the width narrows down to 25 yards. Here again inundations are frequent.

In this section the river throws off numerous branches which need not be detailed here. The banks of this section of the river are covered with thick poplar and reed jungle.

Ferries.—In this section of the river, the only important ferry is on the Khotan—Aksu caravan road, close to the mouth of the Aksu river.

Fords.—In winter there are many fords, but in summer the depth is very great and the river is quite unfordable.

(5) *Karaul to Lop Nor.*

This section of the river affords a route from Charkhlik to Dural, whence routes lead to Khurla and Aksu. As far as Ayirilghan the banks are low and the breadth of the river is from 200 to 350 yards with a depth of 20 feet in the pools. The velocity of the current is about 5 feet a second. The course of the river is continually changing. In this section the river is joined by the Konche river in numerous branches. At Ayirilghan the width shrinks to 35 yards, but the depth is great. From this point the banks of the river are covered with dense thickets of reeds interspersed with poplar forests. The river enters lake Kara Buran, which it leaves by a narrow winding channel through thick reeds, extending 40 miles to Lop Nor.

High water occurs in September and October above the junction of the Konche river, but, below this point, there is little rise at this season, this depending on the flood in the Konche river and taking place in May.

Ferries and fords.—There are no ferries or fords of importance in this section.

LEFT BANK TRIBUTARIES OF THE TARIM.

The Tashkurghan River.

From Wakh Jir to the village of Ujadbai, a distance of about 65 miles, it is known as the Karachukar. It receives on both sides a number of small streams, the Tagerman Su, Kukturuk, Bayik, Kilik, Mintaka, and the Northern Oprang. In this section the river flows through an upland valley, whose breadth is from 1 to $1\frac{1}{4}$ miles, and its dimensions are inconsiderable. North of Ujadbai it is called the Tashkurghan river, and as far as its junction with the Kara Su it flows through an open valley, which is from 4 to 6 miles broad.

In its southern part, the Tashkurghan valley, is a sterile, rocky, and, in places, sandy *sai*; the banks are steep, and rise some 300 feet above the river. Below Kyz Kurghan the valley is covered with fields and meadows. The banks are low and in places swampy. Near Tashkurghan the river, separating into several branches, flows through a marshy meadow land about two miles wide. In this latter section the river, breaking through the ranges of the western Kuen Lun, flows through a narrow gorge with perpendicular banks, which form several terraces raised high one above the other. Only at the mouths of its tributaries does the Tashkurghan gorge broaden out, forming small basins which are occupied by Tajik villages.

The length of the river from its source to Kosarab is about 160 miles. Through its valley, as far as the village of Shindi, runs the most important road from Hunza to Kashgar, with branches to Yarkand and Yangi Hisar. As far as Tashkurghan there are two roads, one on each bank. From Tashkurghan there is only one road.

The Tashkurghan river in severe winters freezes in December and the ice remains till the beginning of March. At this time communication between Baldir and Kosarab, which during the remainder of the year does not exist in consequence of the impossibility of moving along the river valley, owing to the steepness of its banks and the depth and rapidity of the stream, is established on the ice along the gorge of the river.

Fords.—The river is fordable everywhere above Tashkurghan throughout the year. Below this point it is fordable in the cold season, but can only be crossed with the greatest difficulty during the season of high water. There are fords at Tiznaf, and about two miles above Shindi near Shalgin. At Tiznaf the river is from 20 to 25 yards broad. At Shalgin the river flows in two branches, and the width of each is from 15 to 20 yards. At high water, from July to September, in consequence of the rapidity of the current and the rise of the water to almost twice its ordinary depth, the passage of the river below Tashkurghan is extremely difficult, and the Shalgin ford completely disappears. At this time caravans from Tashkurghan to Yarkand and Yangi Hissar have to travel *via* Tagharma and the Kok Mainak pass. In the gorge, the road from Tashkurghan to Tagharma crosses the river several times. The depth of the fords at the highest level of the water does not

exceed 5 feet. The river is about 20 yards broad, with low, gently-sloping banks and hard gravelly bottom.

The Kizil Su or Kashgar River.

The Kashgar river, or Kizil Su as it is called in its upper reaches, is of military importance as it crosses the routes from Semerchensk and Ferghana to Kashgar and Yangi Hisar, and also forms an obstacle on the route from Kashgar to Aksu. The river freezes in places, but not every year. The water has a saline taste and is muddy at high water but is drinkable. The length of the river is some 320 miles and it will be convenient to deal with it in sections:—

(1) *Irkeshtam to the mouth of the Uruk river.*—Through the valley of this section of the river runs the main route from Ferghana to Kashgar *viâ* Osh. The river also forms an obstacle to a force attempting to join this route from the direction of the Uzbel pass. In this section the Kizil Su flows along a ravine, which has an average width of about 500 yards. At Myn Tur, Ulugchat, Sarai Kamysh, Yassi Kechik, Maral Tugai, Buri Tugai, and Ailyama, the ravine broadens out to from 2 to 2½ miles in width; here are *tugrak* groves, alternating with small bushes. The banks of the river in the narrow places of the valley are steep, but in places they are low and gently-sloping. The river flows in a rocky bed, with a breadth of about 1,000 yards, and is divided into several branches. At low water the width of the principal branch does not exceed from 20 to 35 yards, and the depth from 3 to 3½ feet.

Fords.—The road from Irkeshtam to Kashgar crosses the Kizil Su near Irkeshtam, twice at Myn Tur, and at Sari Kamysh. At low water the passage of loaded animals at any of the points mentioned does not present any difficulty, since the depth of water does not exceed 3 to 4 feet. At high water, however, which begins early in May and continues till the beginning of August, fording becomes extremely difficult, even for single horsemen.

At these points the level of the river is highest between 7 P.M. and 11 A.M., consequently caravans and travellers cross by day. The best time for crossing is between 2 and 3 P.M., because at this time the depth of the fords does not exceed 5 feet even at high water. The most dangerous of the crossings mentioned, at Myn Tur and Sari Kamysh, may be avoided

by the road from Eghin to Sari Kamysh over the Suvankul, Akyn, and Chil Puchte passes.

(2) *Mouth of the Uruk to Faizabad.*—This section of the river is of military importance for the Tumen, one of its branches, crosses the main routes both from Ferghana and Semerchensk to Kashgar, while the main river, interposing between the old and new cities of Kashgar, forms an obstacle to a move to the south. The river also forms an obstacle to a direct move from the old city of Kashgar to Faizabad.

From the mouth of the Uruk the valley of the Kizil Su gradually widens, and about 10 miles lower down it emerges on to the plain and throws out to the left two branches, which cross the Irkeshtam road between Kichik Andijan and Kashgar. Both these branches flow between low open banks; their width does not exceed 20 yards, and their depth at low water 3 feet. Near Suluk both branches unite and are called the Tumen; on the right bank of the Tumen, about 3 miles above its junction with the Kizil Su, is situated old Kashgar.

At Kashgar the Tumen flows in a hard, clay-sand bed about $\frac{1}{2}$ mile broad, with some small branches. The banks, for the most part, are perpendicular; their height over the level of the river is, in places, as much as 70 feet. The left bank commands the right.

The chief stream of the Kizil Su flows about 3 miles south of Kashgar in a broad (about $\frac{1}{2}$ mile wide) bed, with a hard gravel bottom. It has a few branches; the width of the largest of them at low water is not more than 25 yards, and the depth about 3 feet. The right bank of the valley of the Kizil Su is high, and generally perpendicular; the left is lower, and descends to the river by gently-sloping terraces. As far as the mouth of the Tumen both banks are covered with fields, gardens, and farmsteads. Below this point the valley is wide and open covered with rice fields and small swamps.

Bridges.—(a) The road from Semerchensk *via* the Turgat and Terek passes crosses the Tumen by two bridges constructed by the Russians.

(b) The road from Kashgar (old city) to Kashgar (new city or Yangishahr) crosses two branches of the main river near its junction with the Tumen by two solid wooden bridges; the length of each is about 30 yards. The banks of the river near each of the bridges have been strengthened by piles.

(c) The road from Kashgar (old city) to Opal and Tashmalik crosses the Kizil Su by a solid wooden bridge, some 40 yards long, near the village of Pakhtakla. Travellers to Opal, however, usually prefer to take the short cut leading to a ford some 2 miles above the bridge, except when the river is in exceptionally high flood.

Fords.—(a) The Andijan—Kashgar road crosses the river by a ford not far from Kichik Andijan. This ford is impassable at high water and can be avoided by a detour to the above-mentioned bridges over the Tumen. This road is, however, difficult owing to fissures in the loess.

(b) On the Semerchensk—Kashgar road the Tumen can also be forded instead of crossed by the above-mentioned bridges, by a ford close to the north gates of the city.

(c) Both the Tumen and the main river can be forded in many places by infantry and cavalry but the approaches would probably require ramping as the banks are high and steep. Bridges might have to be constructed for artillery.

(3) *Faizabad to the Lalmoi Marsh.*—From Faizabad to where the river finally is lost in the Lalmoi Marsh, the river is important from the military point of view, as it forms a serious obstacle to an advance from Kashgar to Maralbashi and the east. The high left bank is desert from Yangi Ustan onwards; the right bank as far as Yangi Abad is covered with villages, cultivated fields and meadows. From Kara Yulgun the valley widens out to a breadth of about 3 miles, the banks become lower and less steep, and almost all the way to Maralbashi are covered with loess and sandy hillocks and *tugrak* groves mixed with clumps of *jida*, tamarisk, *kyruk* and thistles. In places there are flat, low areas, covered with reeds, which at high water are covered with water; the largest of them is on the left bank near the village of Jas-Bulak. In the districts near Maralbashi, along the banks of the Kizil Su, extend cultivated fields, and about 7 miles lower down begins the broad jungly swamp in which it loses itself.

At Rabat Kapriak, where the old Aksu road crosses the river, the Kizil Su has a width at low water of from 20 to 35 yards, a depth of 10 feet, and a velocity of $3\frac{1}{2}$ feet a second. At Maralbashi the river, having thrown off some branches to the right, narrows down to 15 yards, but its depth remains very considerable.

Bridges.—The road from Kashgar to Maralbashi and Aksu crosses the river at Lung Kor, about 5 marches before reaching Maralbashi, by a wooden bridge about 45 yards long. This bridge has 3 spans and is fit for field artillery; besides these there is a bridge at Robat Kupriak. With the destruction of these bridges an advance from Kashgar towards the oases lying to the east of it might be delayed, as fording is impossible in consequence of the depth of the river and the nature of its valley, but the river is narrow and wood is plentiful, so that bridges could be quickly constructed.

Fords.—Although between Faizabad and Maralbashi fords are sometimes open, still the depth of water is so great that in this section we may consider the river as unfordable.

Tributaries of the Kizil Su or Kashgar River.

The numerous northern tributaries of the Kashgar river are crossed by the Irkeshtam—Kashgar road; and the Uch Tash, which falls into it at Ulugchat, by the circuitous road *via* Eghin and Sari Kamysh. The size of the rivers is insignificant; they are all fordable even at high water, and consequently have only a tactical importance. A more serious obstacle for movement are the steep ascents and descents into their valleys, which are deeply cut into the surrounding hills.

(1) *The Suok or Toun.*—Along the valley of this runs the road from Semerchensk to Kashgar. This tributary does not at present reach the Kashgar river. It rises in the eastern slopes of the Suok pass; as far as Toun Tube the valley of the river is broad (about $1\frac{1}{2}$ miles), but about 4 miles lower down it narrows, forming a precipitous ravine, the breadth of which at the Balgin Bashi—Pas Kurghan ford does not exceed 230 yards, and in places is only 25 yards. Its precipitous sides rise from 1,000 to 2,000 feet above the level of the river. From Ak Chi the valley begins to widen, changing near Artish into a basin, which extends some 7 miles from west to east. At the town of Ak Tai the river flows through a valley, which is, in places, 600 yards broad. Along the Artish basin the river flows in several small branches; after its exit from the hills it is lost in the sands situated to the north-east of the ruins of Khan Ui.

Fords.—The Turgat road crosses the Suok very often, and runs in places for a considerable distance along its rocky bed. At high water the depth of water in the narrower parts of the ravine is as much as 5 to 6 feet, and consequently movement

along the Turgat road then becomes extremely difficult, even for horsemen ; at this time the circuitous road *via* Balgin Bashi, Ishtyk Kurghan, and Artish is used.

(2) *The Markan Su*.—This rises in Russian territory, on the southern slopes of the Trans-Alai range, in the snow-topped group of Kizil Agyn, and at Ailyama falls into the Kizil Su. Along the valley of the Markan Su runs the shortest road from Kashgar to lake Kara Kul on the Pamir, *via* Myn Ui and the Kizil Beles pass. The river flows occasionally through a narrow gorge, not more than 12 yards wide, and again along a stony bed from 350 to 500 yards broad, shut in by perpendicular cliffs. In places the hills recede from it, leaving along its banks ledges or wide terraces. In the valley are extensive poplar groves and thickets of *oblepiki*, wild rose and coarse grass.

Fords.—The road to the Pamir frequently crosses from one bank to the other. In autumn and early spring the depth of the fords is not higher than a horse's knees, but in the summer the water would come up under the saddle-flaps, and in some places the fords are even deeper ; the current of the river is very rapid.

(3) *The River Gez*.—This is called in its lower course the Yaman Yar, and is formed by the junction of the Bulun Su and the Tumanchi. Breaking through the Kashgarian hills, the Gez for a distance of 80 miles from Tar Bashi to Tashmalik, flows through a wild gorge which is bounded by high cliffs. As far as Kok Mainak the width of the gorge does not exceed 230 yards and the river flows in a single channel with high precipitous banks ; below Kok Mainak, where the ravine widens out to from 900 to 1,200 yards, the Gez flows in a broad rocky bed, in several branches. Occasionally poplar groves, willows, *oblepiki*, *yulgun* and white mountain pine, overgrown with wild hops, are met with.

The road from Kashgar to Sariqol *via* Bulunkul traverses the Gez defile.

Near the post of Tashmalik the Gez emerges on the plain and gives off to the right some considerable channels—Tetyr Ustan, Saryk Ata Ustan, Baryn, etc. From Tashmalik to Uram Basti the Gez flows along a broad rocky bed. Somewhat below Uram Basti it crosses the road from Kashgar to Tashmalik ; here the width of the river is about 25 yards, the depth 5 feet (in the beginning of April), the breadth of the valley

about 350 yards, the right bank high and perpendicular, the left low and gentle.

Below Uram Basti the Gez is divided into the large streams, Kara Su, Tozgun, and Khan Arik. Dividing into a number of secondary channels, these streams water the southern part of the Yangishahr district and unite by their branches with the Kashgar river.

The Gez is only frozen over in its upper course, above Tar Bashi, but not for long and not every winter.

Bridges.—(a) At Kok Mainak and Gez Karaul, below the mouth of the Kok Sil stream, and at Bash Kupruk there are wooden bridges on the Caucasian system; they are 7 feet wide and from 15 to 20 yards long; from their construction they are suitable only for mountain artillery. In order to avoid the more dangerous fords at high water, and in case of the carrying away of the bridges, ledges have been constructed, but at the present time most of them have fallen away. Below Kok Mainak, on the chief branches of the Gez, bridges with brush-wood surfaces are constructed annually, but they are carried away at high water; consequently in summer the fords below Kok Mainak are avoided by the road from Kupruk Karaul to Kosh Kishlak.

(b) At Uram Basti there is a bridge which is only suitable for the passage of infantry and cavalry (width $3\frac{1}{2}$ feet).

(c) Somewhat to the north of Yapchan, the Kashgar—Yarkand road crosses the Khan Arik by an embankment about 85 yards long with two wooden bridges; the width of the embankment and of the bridges is 35 feet. The bridges and embankment are washed away, every summer, by the floods.

Fords.—Between Tar Bashi and Kok Mainak fording is very difficult even at low water, as the river is about 5 feet deep, even at the fords, and is very rapid; in summer fording is quite impossible. Below Kok Mainak there are fords in many places, but they disappear in summer.

(3) *The Kara Tash.*—This river rises in the northern slopes of the Uzun Kir, near the Kara Tash pass; after its exit from the hills at Altyn-lik, it divides into numerous branches, watering the fields of the northern part of the Yangi Hisar oasis and part of the Khan Arik oasis.

The Aksu River.

This flows from the glaciers about 50 miles north-north-west of Aksu. Turning to the south-east as it leaves the hills, it flows in this direction for about 120 miles to its junction with the Tarim; in its upper course as far as Schaichle the size of the river is inconsiderable. Below this village the river is divided into branches; at Lyangar, where it is crossed by the Aksu—Uteh Turfan road, there are eleven; at the village of Chuk Tal, on the Kashgar road, there are three. On the Chuk Tal—Besh Arik section the width of the river is about 1,000 yards, below Besh Arik the river divides into two large branches; the right-hand stream is called the Kunya and the left the Yangi, and by these it flows into the Tarim about 10 miles above the mouth of the Khotan river.

The valley of the river is bounded on the east by a steep loess ridge, about 70 to 80 feet high, which is distant from the river about 10 miles. At the foot of this ridge are situated the towns of Old and New Aksu and some large villages. The banks of the river are steep, but not high, and there are villages and houses as far as Yangi Abad; below this on both banks extend *tugrak* and tamarisk groves, alternating with reeds and open spaces.

High water begins early in June and reaches its maximum in the beginning of July, when the river inundates the whole district, the level of the water rising from 3 to 5 feet above the ordinary.

In summer the Aksu river, owing to its width and depth, forms a strong defensive line, about 120 miles long, protected on one flank by the mountains and on the other by the Tarim, securely covering the town of Aksu and the eastern oases of northern Kashgaria from the side of Kashgar and Uteh Turfan.

Bridges.—(a) At Chuk Tal and Lyangar there are light bridges fit for cavalry and infantry at low water. These are washed away at high water.

(b) There is a rough pile bridge over a branch of the river near the village of Kumbashi on the Kashgar—Aksu road.

(c) The river is bridged at Abad.

Ferries.—There are ferries during high water at Lyangar and at Chuk Tal on the Kashgar—Aksu road over the main channel, the smaller channels being forded.

Fords.—At low water (from September to the beginning of June), at Chuk Tal, Lyangar and higher up, the river is fordable, since the depth of the principal branch does not exceed $3\frac{1}{2}$ feet (the width does not exceed 60 yards, and the velocity is about $3\frac{1}{2}$ feet a second). Below Chuk Tal the river is unfordable even at low water.

Tributary of the Aksu River.

The Ak Sai, Kazil Kungal, Kok Shal, or Tavshkan river.—This rises in Russian territory not far from lake Chatyr Kul and about 10 miles above Chuk Tal falls into the Aksu river. At high water it forms a very serious obstacle to an advance from Prjevalsk to Uch Turfan and to Aksu via the Bedal pass.

After breaking through the Kok Shal range by a wild ravine, the Ak Sai flows through a broad valley between the Kok Shal range and its eastern spur, the Kara Teke range. In the upper part of the valley there are excellent pasturages, and below Safr Bai the Uch Turfan oasis begins. After its exit from the Kok Shal ravine, the river flows in several branches along a stony bed, with a breadth of from 1 to $4\frac{1}{4}$ miles.

The Ak Sai freezes over in the end of December, and the ice lasts until March. In the rapidity of its current ($5\frac{1}{2}$ feet a second) it considerably surpasses the Aksu river, but (according to the measurements of Sven Hedin) it yields to the latter as regards volume.

A force advancing towards Aksu along the left bank of the river would be obliged to cross its tributary, the Janart, which in summer is a rushing torrent.

In its lower course the Ak Sai gives off to the right several branches, which inundate the broad marshy depression called Ai Kul, which is crossed by the Aksu—Kashgar road between Sai Arik and Chuk Tal.

Bridges.—Across the Ai Kul depression, the Aksu—Kashgar road is carried by an embankment and by bridges over the branches of the river.

Ferries.—A ferry is established during high water at Aral on the Uch Turfan—Aksu road.

Fords.—At low water the river is easily fordable, the width of the chief branch of the river does not exceed 60 yards, and

the depth 2 feet. At high water the river fills the whole of its bed and is about 7 feet deep.

The Muzart River.

This flows from the southern slopes of the Muzart pass. Up its valley runs the road from Aksu to Kuldja *via* the Muzart pass. At Kushtimi (Tschachatschi) the river is crossed by the Aksu—Kuchar cart road.

Near Shah Yar the river divides into two branches—the eastern flows into the long, narrow lake-swamp, Pasnyn Kul, crossing the road from Shah Yar to Kuchar; the western waters the town of Shah Yar and its neighbourhood. There is reason to suppose that, below Pasnyn Kul, both branches flow again in one channel. At the point where the river separates into two branches, the inhabitants of Shah Yar have built a dam, by means of which at high water the surplus waters of the river are directed into the lake, so as to prevent an inundation; at low water, by closing the exit into the eastern branch, the flow of water in the western is increased. At Kokchi Yol (or Kok Yol) near Teres, the Muzart river flows into the Tarim, having at its mouth a breadth of 32 yards and a depth of about $3\frac{1}{2}$ feet. At high water a broad lake is formed here; into which flows part of the water of the Tarim and out of which flows the Inichke river.

The river freezes simultaneously with the Yarkand river in the end of November, and remains frozen about $3\frac{1}{2}$ months. Besides the Kuchar (Chian or Kok Su) river, in summer the waters of the Dinar reach the Muzart, but in winter and autumn they are lost in the reeds of the Sari Kamysh lake, to the south of Bugur.

Ferries.—(a) On the Aksu—Kuchar cart road there is a ferry which is used at high water.

(b) There are various ferries near Shah Yar which are used in summer when the river is unfordable.

Fords.—(a) The river is forded on the Aksu—Kuldja road between Khailik (Chalik Mabuse) and Tamga Tash (Tambatash). This ford is constantly changing and guides are necessary. In 1910 the ford was easy, as the river ran in 11 different channels, from 15 to 60 yards wide. The current is very strong, but there is a good footing on the pebbly bottom. Below this point the river is said to be unfordable before September.

(b) The river can be forded on the Aksu—Kuchar road from September till May, but guides are necessary. The river is 200 yards wide and flows in several channels. In summer this part of the river is fordable in very few places.

The Konche (Yulduz) River (Khaidik Gol).

The Konche river, the last tributary of the Tarim on its left, above Lake Bagrash Kul, is called by the Turkis the Karashar river, and by the Chinese the Khaidik Gol. This river rises on the western slopes of the Abdur Cholon heights, near the Khargati pass.

From its length, it will be convenient to describe it in sections:—

(1) *From its source to the Bagrash Kul Lake.*—Along the valley of the Little Yulduz (Baga Yulduz) it receives on both sides many small streams. Here the dimensions of the river are inconsiderable, its banks are covered with small lakes, thick reeds, and in places muddy, impassable swamps.

Along the valley of the Great Yulduz the Khaidik Gol flows in several branches; on its banks are numerous small lakes, and in places impassable swamps. The breadth of the river in the main channel is from 70 to 90 yards; its depth at low water about $3\frac{1}{2}$ feet and at high water from 7 to 10 feet. From the mouth of the Dalyn stream the river bends to the east, breaking through to the valley of the Bagrash Kul by the narrow wild gorge called the Dalyn Daban. From the mouth of the Arkhatyn, the Khaidik Gol again bends to the south-east, and flows in the same direction until it falls, some 16 miles below the town of Karashar, into Lake Bagrash Kul.

From its exit from the Dalyn Daban ravine to Karashar the river flows in a very tortuous course, forming a number of islands, which are thickly covered with reeds and bushes. The banks are covered with high, coarse grass and occasional *tugrak* trees. Below Karashar, where it is crossed by the great south road from Kashgar to internal China, the river is from 50 to 90 yards broad and about 6 feet deep at low water, and its velocity is about 3 feet a second; at high water the breadth increases to 120 yards and the depth to 15 feet. The right bank has considerable command over the left.

Below Karashar the river narrows down to about 40 yards, but its depth even at low water is from 20 to 30 feet. The banks are about 10 feet high and are covered with thick reeds.

At high water the Khaidik Gol is very muddy. It freezes in the beginning of December and opens again in the beginning of March.

Ferries.—At Karashar the passage of the river is effected on large flat barges which have a carrying capacity of about $1\frac{1}{2}$ tons each.

Fords.—In the valleys of the Big and Little Yulduz the river is fordable in winter. In summer it can easily be crossed in the latter. After its exit from the Dalyn Daban gorge it is unfordable even in the cold weather. It freezes in December and during the three winter months can be crossed by carts on the ice.

(2) *From Lake Bagrash Kul to Tikkenlik.*—From Lake Bagrash Kul the river flows out under the name of the Konche and breaks through the Kuruk Tagh range by a ravine 7 miles long by 500 yards in breadth. Through this runs the Kashgar—Turfan road. At Khurla, which is situated on both banks of the river, it flows in two branches, each of which is about 10 yards wide, 10 feet deep with a velocity of 10 feet per second. Below this point to Tikkenlik the river flows in a well defined bed, 20 to 30 yards broad, about 15 feet deep at low water and with a velocity of 4 feet per second. The banks are generally steep and high and covered with alternate *tugrak* and reed jungles. Near Tikkenlik many branches are thrown off, some of which reach the Tarim.

This section of the river is frozen so hard by the end of December that loaded carts can everywhere travel along its surface. High water occurs in spring when the ice thaws, in August and in autumn when the Tarim floods. The rises are however small.

This section of the river is important from the military point of view as along its banks run routes from Khurla and Aksu to Dural and the southern oases.

Bridges.—At Khurla the river is crossed by a stout, two-spanned wooden bridge. In the neighbourhood of Dural, bridges have been built across the various branches of the Konche and Tarim.

Ferries.—There are ferries across the river at Chigalik and Tur Karavl on the road from Khurla to Dural.

Fords.—This part of the river is unfordable throughout the year, but can sometimes be crossed on the ice in winter.

(3) *From Tikkenlik to Junction with the Tarim.*—This section of the river is unimportant from the military point of view, except as affording a route from Dural to the southern oases. It consists of a series of channels, small lakes, and swamps, generally surrounded by high reeds.

RIGHT BANK TRIBUTARIES OF THE TARIM.

On its right bank the Tarim receives three large tributaries, viz., the Tiznaf, Khotan, and Charchan rivers. The first two reach it only at high water; the last does not flow directly into the Tarim, but first traverses the marsh-lake Kara Buran, into which the Tarim flows from the north.

The Tiznaf River.

This (called in its upper course the Khalastan river—according to Korniloff) rises in the northern slopes of the main range of the Western Kuen Lun mountains not far from the Yangi pass. After emerging on to the plain, the Tiznaf divides into several large channels, which water the Karghalik oasis. The river crosses the Yarkand—Karghalik road 15 miles from Posgam. Here the width of the channel is about 570 yards; its valley is bounded on the left by a chain of low sandy mounds, and between this and the river there extends a broad saline strip which is traversed by three irrigation channels and the small stream Ishtan Saldi, a branch of the Tiznaf; on the right the valley is bounded by a steep ridge. The river flows in several branches; at low water the width of the principal branch is about 25 yards, and its depth $3\frac{1}{2}$ feet.

Somewhat above the bridges at Karche the Tiznaf throws off to the left a broad branch called the Tiznaf Boi, which, in its turn, separates into a number of small narrow branches.

Below this, the Tiznaf enters a strip of loess hillocks which accompany it almost to the oasis of Merket. At low water the river only gets as far as Yantak, which lies on the northern edge of this oasis; at high water it splits up into several branches and almost reaches the latitude of Alager. Some of them apparently flow into the Tarim, others into two small lakes, Bolbilek and Shamshi, which are situated in the desert, about 20 miles to the east of the Tarim. In its lower course the

banks of the Tiznaf are covered with *tugrak* woods, the belt of which on the right bank is 12 miles wide.

Bridges.—The Tiznaf is crossed by a bridge which carries the Yarkand—Karghalik road. The bridge is wooden, of 8 spans; its length, including abutments, is about 500 yards, and its width about 28 feet.

The marshy valley of the Tiznaf Boi, which is covered with thick reeds, is crossed by the Yarkand road at Tokuz Kupruk (between the villages of Tugulaz and Miraklyar) by an embankment about 750 yards long and 20 feet broad, with a number of wooden bridges.

Fords.—The Tiznaf is fordable, but only with the greatest difficulty at high water. The Tiznaf Boi can be forded only with great difficulty even at low water.

The Khotan River.

This is formed by the junction of the rivers Karakash and Yurungkash. The Karakash rises in the district to the south of the Kharangu Tagh and, as far as Shahidulla, flows in the broad valley which separates the Kuen Lun from the eastern end of the Karakoram range. From Shahidulla the river breaks through to the Kashgarian plain by a wild inaccessible ravine. It joins the Yurungkash near Koshlash Langar.

The Yurungkash rises in the hills on the east of the Aksai Chin, about 20 miles south of the At To pass. Like the Karakash it flows, in its upper and middle sections, through a wild inaccessible ravine; after its exit from the hills it waters the Khotan and Tawakkal oases.

At Khotan (Ilchi), which is situated on both banks of the river, the Yurungkash is crossed by the southern road from Kashgar to Keriya and Charchan.

After its exit from the hills, each river, breaking up into a number of branches, flows along a broad channel (about 1,200 yards across), encumbered with large boulders. At low water, from September to the end of May, both rivers are fordable. In the beginning of June, owing to the rain and the melting of the snow on the Kuen Lun, the Yurungkash and Kara Kash increase in volume, the main branch attaining a breadth of over 200 yards, with a depth of 10 feet and a velocity of 4 feet a second. At high water both rivers overflow their low-lying

left banks, on which, for the protection of the adjacent villages, are constructed large cobble-stone embankments.

In the winter both rivers are frozen down to the bottom, and below Khotan are in places completely dried up, leaving only small pools. From the junction of the two rivers, the Khotan river flows in a northerly direction through the Takla Makan desert to the Tarim river, which it joins a little below the mouth of the Aksu river. The breadth of the channel varies between 600 and 1,200 yards; in places it divides into branches, and is continually striving to cut for itself new channels to the east of the former ones. Its banks are covered with thick *tugrak* wood and small bushes, amongst which the inhabitants of Aksu and Khotan pasture their sheep all the year round. The width of the wooded belt is in places as much as 8 miles. On its edge are high sand dunes.

The Khotan river only reaches the Tarim river at high water; at other times the river, as it gets northward, becomes smaller and smaller, in consequence of the evaporation and absorption of its water. In October, when the irrigation of the fields in the Khotan oasis is finished, the level of the river rises somewhat, but after that it again falls and the river disappears about 15 miles to the north of the Mazar Tagh; below this point there are only small pools of fresh water which remain until the next high water. Along the course of the Khotan river, from Koshlash to the Tarim river, there are no settled inhabitants. Along its left bank, and in places along its very channel, runs the caravan road from Aksu to Khotan.

Ferries.—During the period of high water there is a ferry where the Kashgar—Keriya road crosses the river. The passage is effected by large boats.

Fords.—From the end of August, until the river rises in June, it is fordable almost anywhere. The principal ford is on the above mentioned road.

The Charchan River.

This forms an important obstacle on the Khotan—Charkhlik road, while the lower part of its course forms a route direct from Charchan towards Dural. The sources of the river are in the valleys of the northern highlands of Tibet. It is formed by the junction of the Patkalyk and Gukerma rivers which flow from the northern slopes of the Arka Tagh range. From its turn to the north, the Charchan river flows through the

desert in a deep ravine, bounded by high steep banks. About 16 miles above Charchan the valley rapidly becomes broader. At Charchan the river divides into two branches, forming the island of Aralchik, on which is situated part of the Charchan oasis.

Below Charchan, as far as Kain Laik, the river flows very tortuously along a valley which is from 4 to 7 miles broad, covered with poplar woods and a thick—in places impassable—undergrowth of reeds and bushes. In the vicinity of Tattran are a number of small lakes, some sweet, some saline, which are joined to the river by channels and which abound in fish. The belt of woods is bounded on both sides by sandy hillocks, as much as 360 feet high. The river is from 120 to 230 yards broad, and from 10 to 14 feet deep at low water.

Below Kain Laik, the river flows for 25 miles between high banks which prevent its overflowing, the tree jungle giving place to reeds and bushes. It then enters a series of marshes and small lakes and finally joins the Tarim and flows into the Kara Buran lake.

Fords.—The river is fordable in most places throughout the year but with difficulty at high water. It is crossed by a ford on the Khotan—Charkhlik road. This is impassable at high water, during the period of which there is no means of crossing.

Near Tattran the river is only forded with difficulty at low water, owing to its muddy bottom.

OTHER RIVERS.

Of the rivers which at present have no connection with the Tarim and its tributaries, the most important are the Kinkol, Sanju, Keriya, Nia, Tolan Khoja, Bostan Tugrak, Molja, and Kara Muren.

The Kinkol River.

This, although it is an insignificant stream, is important owing to the fact that the bridge path from Sariqol to Yangi Hisar *via* Chahil Gumbaz runs down its valley, which is particularly rich in pasturage.

Fords.—The fording of the stream, particularly near its junction with the Chumbus, is difficult at high water, and detours have sometimes to be made.

The Sanju River.

Flows from the glaciers on the northern slope of the pass of that name. In the upper part of its valley are situated some small villages, and at its exit from the hills is the Sanju oasis, one of the richest in all southern Kashgaria, and celebrated for its healthy climate. Below Sanju the river, separating into numerous branches, waters the Zanguya oasis.

The Keriya River.

This rises in the swamps to the east of the Aksai Chin, a little to the south of the source of the Khotan (Yurung Kash) river. It descends the Kuen Lun range in a narrow gorge in which the fall of the river is as much as 115 feet in a mile, and then flows in a northerly direction, watering the oases of Polu and Keriya. At Keriya, where it crosses the Khotan road it has, at ordinary level, a width of from 20 to 35 yards and a depth of 2 feet.

The river usually freezes over in the end of November and the ice holds until about the middle of February. Below Keriya the river, having split up into a number of branches which water the fields of the Keriya oasis, enters first a belt of loess hillocks, and further on, the sands of the Takla Makan desert. Thanks to the number of perennial springs which feed the river in the district of the Keriya oasis, it flows the whole year to Katak, about 160 miles to the north of Keriya. Below Katak the river, separating into a number of small streams, is lost in the thick *tugrak* woods and impassable jungles of tamarisk and reeds. Formerly the river flowed into the Tarim, and a caravan route lay along its banks, but now all trace of it has disappeared, though water can occasionally be found by digging.

Fords.—The river is everywhere fordable in winter. At high water it is fordable in many places with difficulty.

The Nia River.

This waters the Nia oasis, and flows in spring and summer from the slopes of the frontier range of the Kuen Lun, and is a continuation of the mountain stream Ulug Sai. In autumn and winter the flow of the river ceases between the foot of the Kuen Lun and Nia; below Nia the river flows perennially for a distance of about 70 miles, fed by the numerous springs which rise in its valley.

The Tolan Khoja, Bostan Tugrak, Molja and Kara Muren Rivers.

These flow from the high valleys of the Kuen Lun range, breaking through the frontier range. On the northern slope of the Kuen Lun these rivers flow in narrow ravines with steep conglomerate banks, which have a height of 100 feet and more. Along the bottom of the ravines large groves of poplar, with reed and tamarisk jungle may be met with. Near the lower Charchan road the steep banks of the river ravines become considerably lower, and the rivers flow along broad beds over the rubbish-strewn plain; to the north of the road they are lost in the thick poplar woods, which extend along the road from Nia to Charchan in a broad uninterrupted belt. At the end of the season of high water all these rivers, like the Nia, dry up from the foot of the Kuen Lun to the Charchan road. To the north of this road they flow all the year round for a distance of about 100 miles, thanks to the numerous spring in their lower valleys.

In the intervals between the rivers named, a number of small streams flow from the northern slopes of the Kuen Lun, the majority of which are lost in the sands without reaching the lower Charchan road.

The Charkhlik and Jakhan Sai Rivers.

These rise in the southern slopes of the Alyan Tagh; after breaking through this range they are lost in the woods and swamps before reaching Lop Nor.

5. *Lakes.*

There are few lakes in Kashgaria. Scattered on the frontiers away from the main roads which traverse the country, they have no importance as means of communication. But forming vast reservoirs of water, for the most part fresh, the lakes ensure the possibility of existence for man in many places of Kashgaria. The most important lakes are Bagrash Kul, Lop Nor (Kara Koshun Kul), and Kara Buran.

Lake Bagrash Kul (*Dengiz Nor*, or *Dalai Nor*, according to the Chinese) occupies the deepest part of the basin which is separated from the Kashgarian basin by the Kuruk Tagh. From west to east the lake is about 24 miles across, and its greatest width is about 27 miles; its average depth is about 35

feet. The water of the lake is sweet, and from November to March it is covered with ice 20 inches thick. The northern and western shores of the lake are low, and covered with thick reed jungle, which extends to a width of from four to seven miles, narrowing down in places to 600 yards; beyond the edge of the reeds there extend saline tracts, covered in places with thorn-bushes and tamarisks; further on the more elevated ground is covered with coarse grass and small groves of poplar and willow. On the southern and eastern shores the reeds cover only a narrow strip along the very edge of the lake, above which the shore rises steeply and is covered with sand dunes.

At the north-eastern end of the lake are scattered a few little islands which are thickly covered with reeds. Between the mouth of the Khaidik Gol and the outflow of the Konche river, the lake formerly extended far into the shore in a broad bay, which at the present time is almost dried up, and has formed a swamp covered with reeds and dotted over with numerous pools. The majority of the latter are connected with the Bagrash Kul and have fresh water. The Bagrash Kul abounds in fish, the catching of which gives employment to the Chinese of Karashar.

Lake Lop Nor, into which flow all the waters of the Kashgarian basin, is a broad expanse of water thickly covered with reeds. Its length from south-west to north-east is about 70 miles and its breadth about 25 miles. The lake is surrounded by a hillocky saline plain which occupies a vast area. At the south-west end of Lop Nor, near the mouth of the Tarim, is an open expanse of water about 7 miles in circumference and about 15 feet deep; further from the mouth of the Tarim the open areas become smaller and the reeds thicker. The current of the Tarim is perceptible at a distance of nearly 15 miles from its mouth, where it flows in a narrow channel and consists of fresh water; everywhere else, in the pools and bays, where the water is stationary, it is brackish, and in the east it becomes so salt that even camels will not drink it.

Lake Kara Buran is a marsh thickly covered with reeds and dotted over with small lakes. Lop Nor and Kara Buran abound in fish, the catching of which is the chief occupation of the inhabitants in the vicinity. Above Kara Buran, besides lakes Arka Kul (Sogot), Avulu Kul, and Chivelik, on the right bank of the Tarim is a group of 12 small lakes

surrounded by reeds. The largest of these, the Yangi Kul, has a circumference of about 25 miles; the others are considerably smaller. These lakes are artificially constructed by the natives, who let water from the Tarim into natural hollows by means of specially constructed canals. The fish come in with the water from the Tarim and here they increase, giving an excellent catch to the inhabitants of the neighbouring villages, between whom the lakes are divided. The water of all these lakes is saline, as fresh water is admitted only every three or four years.

Higher still in the valley of the Tarim and its tributaries, small lakes are fairly often met with, these are filled with water at the time of the summer inundation, and do not dry up during the year. Also on the south, along the Nia—Charchan road, there is a group of small, but deep (about 20 feet) lakes, which are fed by springs; these lakes have brackish water with a considerable admixture of sulphurous hydrogen and are celebrated for their astonishing quantity of fish. There is a group of small fresh water lakes amid the sand and loess hillocks near Ordam Padshah to the east of Yangi Hisar.

In the valleys between the Muztagh Ata and the Sariqol range are situated the mountain lakes of Little Kara Kul, Basik Kul, Bulun Kul, Koshkandak, and Chak Kara Kul, of which only the first is described in detail.

Lake Little Kara Kul lies at the western foot of the Muztagh Ata, in a narrow valley which is bounded on the west by the precipices of the Sariqol range. The lake is about 3 miles long from north to south; its breadth at the northern end is about 1 mile, in the middle about $1\frac{1}{2}$ miles, and at the southern end it widens out to nearly 3 miles, and comes close up to the perpendicular cliffs at the foot of the Muztagh Ata. Thus the lake bars the road from Tash Kurghan and Tagharma to the valley of the Bulun Kul. It is deepest at its southern end, where it has a depth of about 85 feet; in the centre the depth varies from 50 to 70 feet. Along the eastern and western shores, at a distance from them of about $\frac{1}{4}$ mile, the depth does not exceed 3 feet. The road from Tagharma to Bulun Kul runs along the western edge of the lake, at the foot of the cliffs which bound it, by a ford the depth of which does not exceed $2\frac{1}{2}$ feet. The bottom is hard, and covered with small gravel. On the eastern edge of the lake there is a foot path, but it is so encumbered with debris from the cliffs that movement along

it is extremely difficult. The Kara Kul freezes in the end of November, but along the edges and near the mouths of springs there are open spots during the whole of the winter. The lake opens in the middle of April. The water is fresh, clean, and quite fit for drinking. There are no fish in the lake.

6. *Springs.*

In the summer, in the mountain girdle of Kashgaria, springs and wells are met with almost everywhere, but when the snow is all melted the majority of them either dry up, or produce brackish water, rarely fit for drinking. Such, for example, are all the springs on the Kashgar—Irkesh-tam road between Ulugchat and Kan Su.

In the plain, springs are to be found fairly frequently in the valleys of the larger rivers of Kashgaria. But they are specially numerous in the belt along the northern foothills of the Kuen Lun, along the line Guma-Khotan-Keriya-Charchan. By these springs the flow of water in the lower courses of the rivers of southern Kashgaria is maintained, and by them is rendered possible the existence of the belt of *tugrak* woods along the Charchan road. Where there are no springs, these woods cease. Nearer to the hills the water-bearing strata lie at a very considerable distance from the surface of the ground. The wells at some of the villages on the Khotan—Charchan road have, for this reason, the enormous depth of from 140 to 200 feet, while water may be obtained in the river-beds in the Takla Makan desert, at a depth of from 7 to 15 feet.

7. *Deserts.*

The Takla Makan desert.—The whole central portion of the Kashgarian plain is occupied by the Takla Makan desert. It is bounded on the west, north, and partly on the east by the Yarkand river, on the south by a tract of loess hillocks, which extend along, and somewhat to the north of, the Yarkand—Charchan road, and finally by the Charchan river from Charchan to Lop Nor. From west to east the desert extends almost 540 miles, and its greatest breadth from north to south is nearly 240 miles. The Takla Makan is a dead land, covered with sandhills, which run north and south, and are in places as much as 300 feet above the surrounding country; in the intervals between the ridges are broad areas of a dark colour, beaten flat by the wind, covered with shingle, gravel, and occasionally small sand drifts.

These areas, which are called by the natives *sai*, swell out in places, forming small, very flat and gentle hillocks and ridges; on the tops of these ridges are found fairly large piles of stones which become gradually smaller from the summit of the ridges to their feet. This formation of the rocky heaps points, in the opinion of the late General Pevtzoff, "to the gradual destruction of mountains of which now there remains scarcely a trace," but some archæologists are of opinion that the Takla Makan is the bed of an ancient sea.

Organic life in the Takla Makan desert is concentrated in the valleys of the rivers which flow through, or disappear in it. Here are found trees, grass, and occasionally inhabitants—herdsmen leading a half-nomad life. Along the valleys of these rivers run the roads which cross the desert. The most important of these is the caravan road from Aksu to Khotan by the valley of the Khotan river. In the whole of the remainder of its area the Takla Makan is completely sterile and uninhabited. The drying up of the rivers and soil, and the dessicating and destructive strength of the winds have long since extinguished all cultivation and organic life, the former extent of which is evidenced by the ruins of large towns and the remains of forests which have been buried by the sands.

Smaller deserts.—In those places where the wooded tract is interrupted, the central desert forms salients, which extend almost to the foothills of the surrounding ranges; such salients are to be found between Ak Langar and Guma on the Yarkand—Khotan road, and on the Keriya—Charchan road between Oi Tograk and Nia. Outside the girdle of *tugrak* woods, and distinct from the Takla Makan desert, are other deserts also occupying large areas; on the north, from Yaka Kuduk on the Kashgar river to the banks of the Konche river, there extends parallel to the course of the Tarim, a zone of deserts about 26 miles in breadth divided by the valleys of the left-hand tributaries of the Tarim—the Aksu and Shah Yar rivers; on the east, on the left bank of the Konche river, these deserts unite with those stretching along the southern foot of the Kuruk Tagh. On the west, in the triangle between the Tarim, the Kashgar river and the Kashgar—Yarkand road, are two desert areas, the Shamal Kum on the north-east of the Kashgar—Khan Arik—Lailik road, and the Ala Kum to the south-west of it. As far as the village of Tarim there extends along this road a fertile strip, about 7 to 10 miles in width, watered by the Khan Arik and Tozgun

streams, but between Tarim and Oi Bag the deserts unite across the shortest road from Kashgar to Yarkand. At their western end they closely approach the main road from Kashgar to Yarkand (on the sections between Ak Rabat and Kuduk, and between Kok Rabat and Shar Makhale), in places they even cross it (near Suguchak and Karakum and between Suguluk and Seidlar). These deserts consist of unbroken ridges extending from north-north-east to south-south-west, and isolated mounds about 30 feet in height in the intervals between the mounds are saline or clay areas, covered with reeds and thorn bushes; poplars are frequent and, on the tops of the mounds, are tamarisks.

To the east of Nia, along the southern edge of the woods, is a belt (from 20 to 25 miles in width) of high sand dunes, which terminates on the left bank of the Charchan river near Charchan. Beyond this, a broad belt of desert, under the names of Kara Kum, Kum Katti, Chong Kum, Yaman Kum, Tugelek Sainyn Kum, etc., runs along the right bank of the Charchan river; it is interrupted on the line Buguluk-Vash Shari by a strip of poplar forest, and then extends further to the north-east towards Lop Nor and Charkhlik (the Ingir Chagaskan desert).

Lop desert.—East of the Tarim river (after its bend to the south) is situated the Lop desert. This unites with the Kum Tagh desert which, beginning on the right bank of the Jakhan Sai river, extends, in a belt about 5 miles wide, along the foot of the Altyn Tagh to near the town of Sachow.

The Ak Bel Kum is a small desert situated south of lake Bagrash Kul.

The Shamal Gaznyn Kum desert, east of the Igarchi Tagh and north of the eastern extremity of the Kuruk Tagh hills, extends, from south of Pichan, eastwards to the limits of Sinkiang.

8. Forests.

The Takla Makan desert is surrounded by an almost unbroken ring of *tugrak* woods, which extend on the north-west, north, and north-east along the valley of the Yarkand river, on the south-east along the valley of the Charchan, and on the south along the previously mentioned tract of loess hillocks. Besides this, woods run along the banks of the rivers which cross, or disappear in, the desert—the Khotan, Keriya, and Nia rivers. The trees of Kashgaria consist of two sorts of poplar, *jida* or

Babylonian willow and the small leaved willow, with an undergrowth of *oblepiki*, tamarisk, *sugak*, and reeds. Only on the banks of the rivers, alongside the very water itself, do the numerous species of trees and bushes form thickets sufficiently dense to form an obstacle to movement; as the distance from the water increases the wood becomes thinner and thinner, and finally, on the edge of the tract, is consists only of gnarled trees, half imbedded in the sand.

9. *Saline tracts.*

The whole of the Tarim basin, being continental, is noted for the considerable percentage of salt in its soil, and there are many saline patches. The most important of these are:—

- (1) The great salt-encrusted dry lake-bed east of Lop Nor, which was formerly part of the lake.
- (2) The area between Suget Bulak and Kalpin on the Yangi Hisar—Yarkand cart road.
- (3) The area between Yaka Kudak and Chilan on the Kashgar—Aksu road.
- (4) The salt pans east of Khotan, between Khotan and Yalgan and between Togra Gaz and Keriya.
- (5) The fairly large salt pans on the Aksu—Karashar road between Saram and Kizil, Shunut and Yakka Arik, Chul Abat and Bugur, Yangisar and Chadir.

In the dry time of the year movement across the saline plains of Kashgaria presents no special difficulties, except the salt dust, which produces inflammation of the eyes. In spring after the melting of the snows, and after heavy rain, the salt plains become so soft that movement is extremely difficult even for horsemen.

10. *Swamps.*

The dryness of the atmosphere and the numerous expanses of desert do not favour the formation of swamps, and these are found only on the banks of the rivers and large lakes, which are covered with trees, reeds, and canes, serving to retain the moisture. To the east of Maralbashi, not far from the junction of the Yarkand and Kashgar rivers, is the Lalmoi Marsh, formed by the overflow of the Kashgar river. This is about 40 miles long by 8 wide and is covered with thick impenetrable reeds. Considerable stretches of swamp, covered with thick reeds and canes,

extend along the banks of the Yarkand and Konche rivers in the neighbourhood of Tikkenlik and Ayrilghan, along the banks of the Charchan below Kain Laik, along the southern shore of lake Kara Buran, and along the western shore of lake Lop Nor (Kara Koshun Kul). On the shores of lake Bagrash Kul a swamp, covered with thick reeds, and enclosing a few small lakes, occupies an area of about 66 square miles between the mouth of the Yulduz (or Khaidik Gol) and the exit of the Konche river. In the valley of the Yulduz the Burun Aral swamp covers both of its banks between its tributaries the Ak Kydyr and Saarmin. Small swamps are also to be found in the valley of the Tiznaf (near Tokuz Kupruk on the Yarkand—Karghalik road), and in the northern Sariqol valleys along the rivers and lakes.

11. *Sai, etc.*

The level, rubble-covered areas, which lie at the foot of the surrounding ranges, and in places extend far into the plain, and which, together with salt plains and deserts, separate the oases of the country from one another, are called by the natives *sai*. The *sai* are of a desert character; they are covered with the products of destruction, both of atmospheric disintegration and fluvial deposits (conglomerates)—shingle, gravel, rocky fragments, and occasionally sandhills. Scanty grass is found here only in the ravines and gullies. The rivers which traverse the *sai* flow in steep ravines, deeply cut in the conglomerate mass.

As regards its topographical nature, *sai* does not present any obstacle to movement, but in the hot summer days its black surface becomes so hot that even natives accustomed to the heat cross it by day with great difficulty, and prefer to make their journeys during the cool night. The transition from *sai* to desert or salt plains forms *shipangi* and *shivali*, and to hills, *kiri*.

The *shipangi* are areas with very light, friable, clay soil covered with small sand heaps and gravel. Like the *sai* they lie at the foot of the hills, and appear to be the result of the carrying away of the surface layer of the foothills by the streams flowing down the slopes of the ranges. Walking on the *shipangi* is as fatiguing as on soft sand.

Shivali are flat basins with a saline soil, producing slender, low-growing reeds.

Kiri are the low, flat ridges and mounds, which are at the foot of the ranges and are probably composed of the products of the washing away of the hills.

12. Oases.

The oases of Kashgaria are mostly situated in its foothill belt not far from the exit of the rivers on to the plain, and a few of them, like a narrow, broken ribbon, extend along the bank of its chief rivers. Distant one from another from 7 to 13 miles the oases amid the surrounding desert are like islands with fertile loess and sandy soil, on which shelters the whole settled agricultural population of the country, and on which its trade and manufacturing life is concentrated.

The position of the oases depends on the course of the rivers, since the existence of organic life in them is possible only with a sufficient supply of water; consequently the size of the oases depends on the size of the rivers. On the banks of the large rivers there are large, thickly-inhabited and rich oases with towns, whilst on the banks of the small rivers and streams there are small oases containing not more than two or three villages.

Beginning in the north-east the chief oases of the basin are situated in the following order:—

- (1) *The Hami oasis*, a large oasis just south of the Thian Shan, on the Turfan—Anhsi road.
- (2) *The Pichan oasis*, between Turfan and Hami.
- (3) *The Turfan oasis*. This is of large extent.
- (4) *The Karashar oasis*, in the basin of Lake Bagrash Kul, is on the left bank of the Khaidik Gol river, about 17 miles above its fall into the lake, and has an area of about 17 square miles.
- (5) *The Khurla oasis* is situated on both banks of the Konche river at its exit from the Kuruk Tagh ravine, it extends about 8 miles along the river, and has a maximum breadth of about 4 miles. Area about 22 square miles.
- (6) *The Bugur oasis* is situated on the three branches of the Dinar river and is about 8 miles in length and 13 in breadth. Area about 44 square miles.

- (7) *The Kuchar oasis*, watered by the Kungei Koksū, is about 17 miles in length by 3 in breadth. Area about 55 square miles.
- (8) *The Sairam and Bai oases* are situated on the left hand tributaries of the Muzart river and have an area of about 100 square miles.
- (9) *The Shah Yar oasis* is small, and lies to the south of the above-mentioned oases, on the course of the same river.
- (10) *The Aksu oasis* and the immediately adjoining oasis of Uch Turfan occupy the middle and lower courses of the rivers Aksu and Ak Sai. The area of the two oases exceeds 700 square miles.
- (11) *The Maralbashi oasis* is situated on the lower course of the Kashgar Kizil Su, not far from its junction with the Tarim river. The area of this oasis, together with the small neighbouring oases of Menut and Merket, is almost 100 square miles.
- (12) *The Kashgar oasis* is by far the largest in Kashgaria. Situated on the middle course of the Kizil Su and on the lower courses of its chief tributaries, this oasis, with the immediately adjoining oases of Yangi Shar and Khan Arik and the separate oases of Artish, Altin Artish, Mushi, Opal and Tash Malik occupies an area of over 1,100 square miles.
- (13) *The Yangi Hisar oasis* is watered by canals from the Kinkol and Kara Tash river, and its area, including some small oases scattered along the Kashgar—Yarkand road and at the exits of the river from the defiles, is about 250 square miles.
- (14) *The Yarkand oasis*, one of the richest and most fertile in Kashgaria, is situated on both banks of the Yarkand river near its exit from the town; north-east of Yarkand it extends in a narrow strip along the right bank of the river as far as Merket. The area of the oasis is approximately 530 square miles.
- (15) *The Karghalik oasis* adjoins the Yarkand oasis on the south-east; it is watered by the rivers Tiznaf and Kugiar, and including the neighbouring oases of Kugiar and Beshtarik, it occupies an area of about 180 square miles.

- (16) The oases of *Guma*, *Sanju*, *Zanguya* and *Pialma*, further to the east, on the Khotan road, and near the exit from the hills of the river Sanju, whose total area is about 90 square miles.
- (17) *The Khotan oasis*, watered by the Kara Kash and Yurung Kash, is about 45 miles in length and 20 in width, and has an area of about 450 square miles.
- (18) *The oases of Chira (Dumuka), Keriya, Nia, and Charchan*, lie to the east of Khotan with a total area of about 180 square miles.

Besides the numerous oases along the chief roads of Kashgaria, some very small oases, consisting of one or two villages or even of a dozen or so houses, are scattered along the northern foot of the Russian and Altyn Tagh ranges. Many such small oases have recently sprung up in southern Kashgaria between Keriya and Charchan.

Speaking roughly, the area of the whole of the oases of Kashgaria, not counting the scattered villages in the valleys of its mountain girdle, probably does not exceed 4,500 square miles, or, in other words, $\frac{1}{15}$ th of its total area. This area is increasing rapidly, and in the event of modern scientific irrigation being brought into use, the area under cultivation could be increased almost indefinitely.

The loess hillocks which surround the desert were formed, partly by the atmospheric destruction of the mass of the primary loess which surrounded the desert and partly by the deposit of fine loess dust, on the edges of the *tugrak* woods and tamarisk groves. Piling up more and more, the loess dust gradually buried the woods and groves, preparing soil for future generations of vegetation, and at the same time preparing for man a large supply of excellent fuel; on opening up the hillocks produced by this piling up of dust, layers of dead roots and tree trunks separated by layers of loess are always to be found.

The breadth of the zone of hillocks is not uniform in southern Kashgaria; between Chira and Keriya it is as much as 80 miles wide. For the greater part of its extent it is covered with woods, or tamarisk groves and reeds; on its wedge-shaped projections, which point towards the hills, are situated the most important oases of Kashgaria, and new ones are springing up. The inhabitants of the newly formed settlement, by pulling

down and levelling the hillocks, obtain soil which, with sufficient irrigation, yields a fabulous harvest.

The area of the hillocks, and consequently the reserve of land suitable for cultivation, which Kashgaria possesses, is unknown, and it would be difficult to ascertain it even approximately; but we may say that the value of this reserve depends directly upon the quantity of water which the country has available for the irrigation of new land, and the population available to carry out the necessary irrigation work.

13. *Geographical Summary.*

The facts given above regarding the geography of the country can be summed up as follows:—

- (1) The mountain girdle of Kashgaria is very well watered; water is met almost everywhere in the numerous rivers and streams which flow along its valleys and ravines. In summer there is even a superabundance of water. In the district of the Lower Tarim and Konche river, water is to be had in abundance all the year round. The foothill belt of Kashgaria is best watered in its western section between Kashgar and Karghalik; the belt along the northern hills and southern Kashgaria between Karghalik and Charchan are less well watered. Finally the most poorly provided with water is the central Takla Makan desert, where water is only to be found in the beds of the rivers which cross it.

The comparative scarcity of irrigation in the foothill districts of southern Kashgaria depends principally on the non-existence in the mountains of the Central Kuen Lun of large glaciers, the gradual diminution of the rainfall from the south-western to the north-eastern districts, and the lack of population, which prevents full use being made for irrigation of the existing water supply. In northern and western Kashgaria water is comparatively plentiful. Towards the east, it becomes scantier. At the beginning of summer the rivers flood rapidly, but they soon drop, and often dry up in winter. From south-west to north-east the hill vegetation gradually becomes

scantier. At the commencement of the summer, the rivers of southern Kashgaria rapidly fill up with water, which afterwards rapidly falls, leaving only deep dry ravines. The previously mentioned belt of springs lies to the north of the Charchan road, along which is located the settled population of southern Kashgaria.

- (2) In summer, the rivers of Kashgaria have a great quantity of water, which far exceeds the amount required for the irrigation of the present cultivated area. The very late rise of the river does not admit of the utilization of this abundance of water; the low level of the water in the rivers in the early spring, when there is the greatest need of it, causes the inhabitants of the villages which are distant from the heads of the irrigating channels, and where they already feel the want of water, to reduce considerably their area under cultivation. Notwithstanding the industry of the inhabitants of Kashgaria, the existing irrigation system could hardly be increased by them to such an extent as to utilize the supply of water which at present runs to waste; nevertheless the area under cultivation is increasing rapidly and, should the country ever be occupied by a European nation with the necessary energy and technical knowledge of irrigation, there appears to be no reason why it should not be increased almost indefinitely.
- (3) In summer, troops operating in Kashgaria would everywhere find water in abundance, but on the other hand, every stream and every river would present a more or less serious obstacle. In winter, the rivers are covered with ice or their level is so much reduced that they lose their importance as obstacles. But the provision of drinking water might present a very serious difficulty. In winter, the villages which are situated on the irrigation canals do not use running water, the flow of which in the canals ceases about the end of November, but get their water from ponds, which are filled in the autumn, and in which the water remains until the following spring. Owing to the extremely insanitary habits of the natives, these ponds rapidly become foul, and form nurseries of

every possible disease, and consequently the use of water from them would affect very unfavourably the health of the troops.

14. *Climate.*

The climatic conditions of Sinkiang have not yet been sufficiently studied. Meteorological observations extending over several years have been carried out only in Kashgar. For the remaining parts of the country there are only the daily notes of travellers who visited them. Consequently the materials available do not give an accurate picture of the climatic conditions of the whole country. We know, however, that the general conditions of the Kashgarian basin are very different to those prevailing in the steppe country north of the Thian Shan.

The climate south of the Thian Shan is like that of most continental countries, very hot in summer and severe in winter. The rainfall is extremely scanty, and the air very dry. The winds in the spring are very strong, and usually begin about 11 A.M., and last till the evening. Duststorms are frequent.

TEMPERATURE.

Observations in Kashgar, for some seven years, give the following as the mean monthly and annual temperatures of the air (in Fahrenheit degrees) :—

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
Mean maximum.	32.4	45.1	56.2	71.6	80.8	89.9	91.5	88.1	81.6	68.7	52.0	36.6	66.2
Mean minimum.	12.5	22.5	36.1	49.0	58.1	65.6	68.3	53.3	56.9	42.2	28.8	16.4	43.5

SEASONS.

The seasons of the year are divided roughly as follows :—

Spring.—In the mountain girdle of Kashgaria spring begins late. In the northern valleys of the Sariqol range deep snow lies until the end of March, and sometimes till the beginning of April, and snowstorms do not cease till the end of April. On the plains spring begins considerably earlier—in northern Kashgaria in March, in the Yarkand oasis in the end of February, and in southern Kashgaria in the middle of February ; the lakes and rivers open only in the beginning of March, and then verdure begins to appear. At the end of March, in the plains, fruit trees are almost everywhere in flower.

In the plains the arrival of spring, and the commencement of the thaw, is characterised by stronger winds, which sometimes change into storms with a velocity of from 75 to 95 feet per second. The winds are usually accompanied by duststorms. Towards the middle of March the winds begin to abate, warm weather becomes settled, and slight rains fall.

Summer.—In the mountain girdle summer commences in May. In the course of this month the trees bud, the grass springs up, and the weather becomes warm and even hot, cooled however by fairly frequent rain. In the plains the summer commences considerably earlier. At the end of April the maximum temperature of the air is as much as 88° . The months of May to August, inclusive, are extremely hot, the hottest being July. The mean temperature, according to the preceding table, is about 80° , but the maximum observed at Kashgar was 104.2° . In some years it is considerably higher as temperatures of 102° are often observed in June.

In the oases the presence of trees and the strong wind considerably reduce the heat, lowering the temperature about 10 degrees in comparison with that of open places, but in the deserts the maximum temperature should be considerably higher.

In the Takla Makan desert, in the month of March, General Pevtsoff observed a temperature of the air of 81° , and at the same time the temperature of the sand was 140° , and in southern Kashgaria Captain Roborovsk in April observed a temperature of the sand of $152\frac{1}{2}^{\circ}$ in the sun. In June and July the surface of the *sai* and sands of the Kashgarian deserts becomes hotter

and hotter, and consequently travelling by day becomes disagreeable, even for the natives who are accustomed to the heat. The lack of shade and reflection from the sandy soil make the heat particularly trying. In the wooded and marshy belt of the valleys of the Tarim and its tributaries, the suffering caused by the heat is increased by myriads of mosquitoes, midges, and gadflies, making travelling by day an impossibility.

Autumn.—In September and October, almost everywhere on the plains there is delightful weather, calm, moderately warm, and clear. In the hills at this time there is also excellent weather. At the end of September and beginning of October in the high mountain valleys of the Sariqol there are occasional falls of snow, but it does not last long, and only in deep ravines which are hidden from the sun. In general, autumn may be considered as the best season of the year in Kashgaria. At the end of October the frosts begin on the plains.

Winter.—November may be considered as the beginning of winter on the plains, although in the course of this month clear, calm weather prevails. In the beginning of December severe frost prevails and by the 20th of that month the ponds, lakes, and rivers begin to be frozen over, and cold winds begin to blow, accompanied by duststorms. The coldest period is from the 10th January to the 10th February. In the middle of December, and sometimes even later, the first snow falls, but it soon melts; in some years there is absolutely no snow. In those winters when there is most snow it does not lie more than a week, its thickness rarely exceeds 8 inches, and usually is only about 4 inches.

In the mountain girdle of Kashgaria there are frequent snowstorms. The nomads, who pass the summer with their flocks on its high mountain pastures, have come down by the end of September, and they spend the winter in the bottoms of the valleys, which they only quit at the end of April or beginning of May. The nomads of southern Kashgaria pass the greater part of the year at considerable altitudes. Speaking generally, the winter in Kashgaria is severe. The lowest temperature observed in Kashgar in the winter was 7.7° F. Thus the absolute annual range of temperature of the air at Kashgar is 96.5° . In southern Kashgaria the winter is very severe.

PREVAILING WINDS.

In summer, in the plains, rain occasionally falls, but so seldom and so scantily that it practically produces no freshness.

At this time there is rarely any wind, but it sometimes comes in short, fierce storms.

In Kashgaria the wind blows from all directions, but the prevailing wind over the whole of Kashgaria—hills and plain—is from the north-east. It is most frequent in the summer months, bringing with it sandstorms and occasionally rain, but it sometimes occurs also in early spring. In the plains there are often west and south-west winds; after these there are often, in the western half of the country, north-west winds, and in the eastern half of the country, north-east winds. But the most prevalent wind in the plains is the westerly, as may be seen from the slopes of the sand dunes and hillocks, and also from the slope of the trees, leaves and stumps, all of which have a considerable inclination towards the east.

In summer, in southern and western Kashgaria, there are frequent winds blowing from the deserts of the Takla Makan, which lower the temperature in the foothill tracts by some 5° . The winter winds of Kashgaria, which blow from the frontiers to the centre, and the opposite winds which blow from the centre to the frontiers, are doubtless caused by the peculiarity of the mountain system of the country, and are winter cyclones and anti-cyclones. In the highlands of southern Kashgaria the winter south-west winds, which sometimes blow for a whole month, are always accompanied by clear skies and a considerable rise in the temperature of the air; consequently the inhabitants of the Russian range, the Kharangu Tagh and the Tekelik Tagh leave the lower valleys where they spend the cold weather, and ascend with their flocks to the tops of the ranges, at a height of from 10,000 to 12,000 feet, and there remain some three or four weeks, until there is a change in the wind. In Kashgaria the wind blows mostly by day. Beginning about 11 A.M., it continues until about 5 P.M., at times becoming a little quieter. During the evening, night, and morning there is a calm, and in the morning the air is clear.

The summer and spring winds, especially the latter which often change into storms, are accompanied by duststorms. The thick loess dust and sand, which are carried by the wind, darken the atmosphere to such an extent, that sometimes at a distance of only 20 or 30 paces it is impossible to see even large objects like trees, houses, etc. The duststorms are

often accompanied by rainstorms, because the presence of dust in the atmosphere tends to condense the vapour which is in it. The combination of dust and rainstorms is more frequently seen in the spring and autumn months, *i.e.*, in those months when the air is most moist. After a storm there remains in the air for some days an extremely fine mineral dust, which as it settles, covers the surface of the ground with a thin layer. This, which the natives refer to as "Topa yaghdi" (*i.e.*, dust has fallen), appears to be characteristic of Kashgaria. The dust forms an excellent manure for the fields.

RAINFALL.

As the winds are frequent and calms are rare, duststorms are a very frequent phenomenon in Kashgaria. There are unusually not more than 100 bright days in a year; and days when the atmosphere is quite clear, and it is possible to see distant objects, are very rare. Consequently heliographs would be of little use in Kashgaria. The paucity of the rainfall and the unusual dryness of the atmosphere, are the distinguishing features of the climate. The quantity and distribution of the rainfall at Kashgar may be seen from the following table which is based on about seven years' observations at the British Consulate-General:—

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
Average quantity of rain or snowfall in inches.	·31	·04	·21	·20	·79	·40	·34	·71	·29	·03	·02	·3	5·2
Average number of days on which rain or snow fell.	1·1	·1	·9	1·0	1·3	·9	·8	2·0	·8	·1	·1	·4	9·4

Rain in the plains falls mostly in April, May, and August, and occasionally in summer, sometimes consisting of short, sharp storms which wash away the houses in the towns and villages. But generally the air of the Kashgarian plains is extremely dry.

In the mountain belt of Kashgaria much more snow falls and the rain showers are more frequent and of longer duration, the greatest quantity falling in June, but even here the total quantity of rainfall is probably much less than that in Soviet Turkestan.

The north and north-west winds in travelling over the plains of Siberia and Central Asia and the mountains surrounding Kashgaria lose most of their moisture, and arrive here almost dry, bringing to Kashgaria an insignificant amount of rainfall. The atmospheric currents from the Indian Ocean leave the greater part of their moisture, in the shape of snow and rain on the southern and south-western slopes of the Himalayas and the Hindu Kush; and according to the observations of Prjevalski, only in the mountains to the south of Keriya is the influence of the south-west Indian monsoon felt in the plentiful rains which fall during June, July, and sometimes to the end of August. Hail falls very rarely in Kashgaria, and in many places the inhabitants are quite unacquainted with it.

The climatic conditions of the country may be considered quite favourable to the health of the inhabitants. Although in some places there is much sickness, it must be ascribed, not so much to the climate, as to insufficient housing accommodation, the very insanitary conditions of the villages, poverty, sexual excesses, and the use of *charas*.

15. *Season for Military Operations.*

The best time for the movement of troops in Kashgaria would be either from September to November, or in March and April. The level of the rivers at these times is very low, especially in spring, when almost all the water is drawn off for the irrigation of the fields, and besides, in each village along the road, running water could be obtained while the climate, also, is suitable during these periods.

16. *Diseases.*

Malaria.—There is much malaria. The principal cause seems to be the canal and pond system of water-supply in the towns and villages. The towns of Yarkand and Aksu, in the neighbourhood of which are extensive areas of paddy fields, have a specially severe type of fever, and a high percentage of cases.

Rheumatism (muscular and osseous) is caused chiefly by living in damp and badly floored dwellings, and by the habit of the natives of warming themselves in damp clothes before the stoves. Rheumatism is especially prevalent in those towns and villages where *mata* is produced, as the bleaching of it, which is carried on chiefly in the autumn, necessitates the workers standing for some hours in water.

Intestinal diseases are caused by the use of bad water, and in summer by the inordinate consumption of melons and other fruits. Gastritis is often seen among *hashish* smokers, when their physique has been exhausted.

Inflammation of the lungs occurs fairly often in spring and autumn, when there are sharp variations of temperature.

Skin diseases.—Amongst these, eczema, and diseases of a parasitical nature—itch and ulcers—caused by the uncleanly habits of the people are most prevalent.

Eye diseases.—Cataract and conjunctivitis are most prevalent. The principal causes are dirt, the fine saline dust in the air, and the unsatisfactory ventilation of the houses.

Venereal diseases.—Secondary and tertiary syphilis are very frequently met with in patients of all ages, even children. In the course of 18 months not a single case of primary syphilis was observed at Kashgar. Captain Deasy states that venereal disease affects, though not with great virulence, more than nine-tenths of the population.

Goitre is most prevalent in the Aksu, Yarkand, Karghalik, and Khotan oases. The thyroid gland reaches enormous dimensions; the disease is accompanied, as in other countries, by respiratory and circulatory troubles and a loss of physique. The causes of the disease are not known, but it is often attributed to the use of bad or hard water. It has been noticed that persons who come from Soviet Turkestan often contract the disease about three or four years after their arrival in Kashgaria.

Infectious diseases.—Of infectious diseases, by far the most common is small-pox, which occurs almost every year in epidemic form. It is so widespread that practically every child in the country gets it, and hardly a native can be found in the whole valley who has not had it at some period of his life. Other infectious diseases are rare and are generally isolated imported cases.

In general, however, the health conditions of Kashgaria may be considered satisfactory, and as a proof of this it may be mentioned that the Russian Consular guard of 50 Cossacks during 18 years at Kashgar, in spite of the far from satisfactory nature of their quarters, had only four deaths, and these were from purely accidental causes.

NORTH OF THE THIAN SHAN.

17. *Mountains.*

Of the mountain ranges in Sinkiang, north of the Thian Shan, little is known. The more important are :—

The Schkilik Tau, separating the valley of the Ili from that of the upper Tekes river. This is in reality a spur from the Ala Tau in Russian Semerchensk and forms an obstacle on the road from Aksu to Kuldja *via* the Muzart pass. The average height of the range is about 11,000 feet.

Passes.—It is crossed by the Aulie-Tash (10,168'), the Chonochai and the Chateh Chapchal (9,840') passes. The latter being on the Aksu—Kuldja road, is the most important. It is easy for pack transport, and could without much difficulty be made into a cart road.

The Borokhoro, Talki, or Iren Mountains.—These are in reality a spur of the main Thian Shan range, but owing to their extent and importance, are here described as a separate range. The importance of this range lies in the fact that it imposes a practically impassable barrier from the sources of the Manass river to the Zairam Nor lake, between Ili and Manass, and forces the line of communications between these places to make a great detour to the north past the Zairam Nor. It leaves the main Thian Shan range between the sources of the Manass and Kash river and forms an unbroken chain, extending west by north, to the Zairam Nor, and thence west into Soviet territory. From the point of leaving the Thian Shan to the meridian of Chinho, the range is lofty, glacier covered, and apparently impassable even by expert mountaineers.

Passes.—From this point, the range becomes somewhat lower and, south-west of Chinho, can be crossed from the Dunde-Untun and Shari-Davan valleys into the valleys of the Kash drainage by the difficult Ara-Untun, Nilkha, Sharguto and Kursai passes.

Westwards of this point, there are no known passes through the range until the Talki, south of the Zairam Nor, is reached.* This is the only pass of any importance throughout the entire range and is crossed, at a height of 8,000 feet, by the Ili—Urumchi main cart road. The road over the pass is quite easy with gentle gradients.

The Kirk-terek range, on the south of the Borotala river, extends from north of the Zairam Nor lake to near Tolitai, south-west of the Ebi Nor. This range forms an obstacle on the short road from Santai to Tarbagatai *via* Borotala. It consists of barren mountains strewn with rocks and gravel, with, here and there, wormwood and low scrub in the ravines with which the range is intersected.

Passes.—The eastern end of the range appears to be crossed easily, almost anywhere, by pedestrians. Pack transport can cross the range by the Santai—Borotala road without any difficulty.

The Tarbagatai range.—This is a high, snow-covered range shutting off Tarbagatai from the district of Zaisan in Soviet territory. It ends in numerous low spurs in the neighbourhood of the Black Irtish river. The eastern part of the range forms an obstacle on the roads from Zaisan to Tarbagatai and to Sharasume in Mongolia.

Passes.—The passes on these routes appear to be easy.

The Saure or Sali Mountains.—These appear to be a spur from the Tarbagatai range and extend, from the Soviet frontier north-east of Tarbagatai, to the neighbourhood of the Uliungur Nor. This range runs to a height of about 5,000 feet and the hills are rounded and covered with good pasturage which supports the large flocks of sheep belonging to the local nomads. These hills are unimportant from a military point of view.

The Ala Tau.—All along the Soviet frontier, from the Ebi Nor lake almost to Khargos, extend numerous ranges which are spurs of the Ala Tau. Little is known of the nature of those ranges, but they block communications between Semerchensk and Sinkiang in this neighbourhood, and compel trade to take the routes either through Bakhti and Tarbagatai or Djarkent and Ili.

* Russian maps show a cart road leading directly through the range from Kuldja to Tolitai on the Urumchi—Ili main road.

Djair Mts.—Separated from the frontier range of the Ala Tau by the Zungarian Gap, north of the Ebi Nor lake this spur extends across the Kweitung—Tarbagatai cart road just south of Yameatutai. This is of no great height.

Passes.—This range is crossed by the above mentioned cart-road at the easy Burgul pass, which is fit for wheeled transport, and by the short road from Borotala to Tarbagatai, which is easy for pack transport.

18. Rivers.

ILI OR TEKES RIVER.

This, under the name of the Tekes river, rises in the Bash Oglu range of Russian Semerchensk, not far from the Sart Chol pass. It is an unimportant stream until it is joined, near Naryn Kol, by the Bayum Kol stream, flowing down from mount Khan Tengri. From this point the river flows through a wide, grassy valley in a deep cut channel with steep banks. The general direction of the river from its source to the junction of the Jirgalan, near which the mountains again close in, is due east. From here the mountains recede on the left bank and the river turns due north until it is joined by the important Kunges. The river, now known as the Ili, flows west from this point through a broad, flat, cultivated valley, passing just south of Kuldja and entering Russian territory south-west of Ilifu (Suiting).

The military importance of the river is considerable for the following reasons :—

- (1) It has to be crossed twice on the road between the Muzart pass and Kuldja.
- (2) It forms an obstacle on the routes from the Jirgalan and Kok Su valleys to Kuldja.
- (3) It lies across the road from Prjevalsk and Vyerni in Semerchensk to Kuldja.
- (4) Its wide valley forms an easy pass into the Ili district from Soviet Semerchensk.

Bridges.—

- (a) At Otnintagai near the mouth of the Agias on the direct road from the Muzart pass to Kuldja. No

details of this bridge are available except that it is constructed of wood and was in good repair in August 1911.

- (b) 16 miles east of Otnintagai a very rickety bridge, with alarming gradients and inequalities.
- (c) 2 miles below the mouth of the Little (Kichik) Jirgalan and 1 mile above the mouth of the Big (Chong) Jirgalan, on the road from the Jirgalan valleys to Kuldja. This is known locally as the Jirgalan bridge. It is built of heavy pine logs on the cantilever system but is in bad repair. It is 75 feet in length with a 40 feet central span, 30 feet above the normal river level. The approaches are slippery for about 40 yards, particularly on the right bank. The rock is hard and the roadway is in bad repair so that it requires care for laden animals. It is wide enough to take carts in single file.

Bridging material is generally available throughout the length of the river, particularly in the upper reaches.

Ferries.—

There are several ferries on the lower part of the river near Kuldja. So far as is known the chief of these are :—

- (a) Yamantur ferry, on the road from the Jirgalan valleys to Kuldja. This is 150 yards in length, crossing the lower end of a long, deep pool. The river is deepest near the left bank where the strongest currents runs. The current is swift and the ferry boat lands 100 yards below the starting point. The left bank is steep and 15 feet high. Pack ponies are generally swum across the stream. The ferry boats are large (40 feet by 10 feet) and flat bottomed, and are towed across by swimming horses.
- (b) Toukou ferry, on the Muzart—Kuldja direct road. The details of this ferry are unknown but are probably similar to the Yamantur ferry. There is said to be only one boat at each ferry but a few more could probably be found up and down the river.
- (c) There is said to be another ferry due south of Ili (Suiting) of which the details are unknown.

In 1914, a Russian had been given a monopoly to run boats up the Ili from the Russian frontier to Kuldja. No details of the number of boats in his possession are available.

Fords.—The upper reaches of the river, above the junction of the Big Jirgalan, are fordable with difficulty in many places, except from June to the end of August when the river is swollen by melting snow and becomes impassable. Below this point the river is said to be unfordable even in winter.

The known fords are :—

- (a) Near the mouth of the Agias river, a fairly easy ford with good approaches and a smooth bottom.
- (b) 4 miles below the mouth of the Cheluk Turuk stream. The river here runs in four channels, the two deepest of which are the 2nd and 4th from the right bank. These, on the 4th November 1907, were up to the girths of a 14-hand pony. Each channel was about 60 yards across with a strong current and a bottom of smooth boulders 6 inches in diameter. The ford is complicated and requires a guide. It is probably impassable from May to September.

TRIBUTARIES OF THE TEKES OR ILI.

All the important tributaries of the Tekes or Ili river in Chinese territory are on the right bank. They are :—

- (1) The *Bayann Kol*, which is joined by the Naryn Kol close to the village of that name. This is a considerable mountain torrent flowing down from Mount Khan Tengri. It is probably fordable only with difficulty in summer but easily in winter.

Bridges.—The road from Shattu into Soviet territory up the right bank of the Tekes is said to cross this stream by a log bridge.

- (2) The *Urteng, Muzart or Muz river.*—(The last name is probably the most correct.) This takes its rise in the numerous glaciers surrounding the Muzart Pass. The Aksu—Kuldja road follows the valley of this stream for some distance, crossing it in many places.

Bridges.—Where the Muzart Pass—Kuldja road crosses the river, foot bridges have been constructed but baggage animals have to cross by fords, except at Shattu.

At Shattu there is a stout log bridge over which most of the traffic between the Upper and Lower Tekes valleys, as well as the traffic between Aksu and Kuldja runs. This bridge is wide enough to take wheeled transport, but the approaches would require preparation.

Bridging materials (pine trees) are plentiful throughout the course of the river.

Fords.—The river is fordable only above Shattu.

(3) *The Agias river.*—This rises amongst the glaciers of the Khalyk Tau range and has a length of over 60 miles, the first half of which is in a westerly direction. The remainder of its course to the Tekes river runs due north. The upper part of the river is of no military importance. The lower part forms an obstacle on the route from the Muzart pass to Kuldja, *viâ* the Tekes valley.

Bridges.—The route from the Muzart pass to Kuldja *viâ* the Tekes valley crosses this river by a bridge near Agias. This is constructed of stout logs and is fit for wheeled traffic. It is carried by two road bearers consisting of huge pine logs and chesses of sawn pine planks. The span of the bridge is 60 feet and the road way is 40 feet above the normal river level. The bridge is liable to be destroyed by floods in summer, when recourse must be had to the ford or ferry about 20 miles to the north. Bridging materials (pine trees) are plentiful throughout the course of the river.

Fords.—The lower part of the river is unfordable from June till the end of September except at the main ford situated some 2 miles above the junction with the Tekes river. This ford (from left to right bank) is about 250 yards long, diagonally down stream, the breadth of the river being about 80 yards. The stream in August has a maximum depth of 3 feet and a current of some 7 miles an hour. This ford is probably often impassable in summer, when there is said to be a ferry.

(4) *The Koksû river.*—This rises in the Karagai Tash range and flows west down a narrow valley for the first 60 miles of its course. From this point it turns due north for 50 miles till it joins the Tekes river. The upper part of the river crosses

the route from Kuldja to the Yulduz valley *viâ* the Karagai Tash pass. The lower part of the river forms an obstacle on the road from the Muzart pass to Kuldja *viâ* the Tekes valley.

Bridges.—The Koksû is crossed by a bridge on the Muzart Pass—Kuldja *viâ* Tekes valley road some 2 miles from its mouth. This consists of huge pine logs resting on rock and stone abutments with an 80 feet span. The bridge is in very bad repair and full of holes.

Fords.—The upper part of the river where it is crossed by the Kuldja-Yulduz valley road is a glacial torrent 60 feet wide by 1 foot deep in summer and fordable anywhere throughout the year. The lower portion of the river is quite unfordable in summer but is said to be fordable in places during the winter. The chief obstacle to fording the river where it enters the Tekes valley are the high cliffs which confine it into a narrow gorge. These are 150 feet high on the left and 500 feet high on the right bank, the river being some 50 yards across. Above the bridge the banks are more gentle and the river widens to some 100 yards, and a ford could probably be found here in winter.

(5) *The Jirgalan river.*—This rises in the Karagai Tash and flows west to the Tekes river. Its only military importance lies in the fact that up its valley runs an easy route from Kuldja to the Yulduz valley *viâ* the Jambu pass. The hills on either side of this river are covered with excellent pasturage and are finely wooded with gentle rounded slopes.

Bridges.—Material for constructing bridges is available everywhere.

Fords.—The river is probably fordable everywhere in winter and in many places in summer.

(6) *The Kunges river.*—This rises on the northern slopes of the Narat range near the Adunkur pass and flows west by north till it joins the Ili river in the neighbourhood of the Karaburo swamp. The river has a total length of some 120 miles. In spite of its size it is of little military importance as it crosses no important route and its valley is as yet thinly inhabited.

Bridges.—There are no known bridges over the river. Bridging material is, however, everywhere available.

Fords.—The river is unfordable for the greater part of its length in summer though there are probably a few fords in winter. Of these however nothing is known.

(7) *The Kash river.*—This rises at the junction of the Boro-khoro with the main Thian Shan range. It flows west for some 130 miles, after which it turns south and joins the Ili river some 25 miles east of Kuldja.

This river also is of little military importance. It crosses no important routes and its valley is inaccessible and thinly inhabited, except at its point of junction with the Ili river.

Bridges.—Nothing is known of the bridges across this river, but material for their construction is everywhere available.

Fords.—The lower portion of the river is probably unfordable throughout the year.

THE BOROTALA RIVER.

This rises in the mountainous region on the Soviet frontier north-west of the Zairam Nor Lake, and flows almost due east into the Ebi Nor lake. It forms an obstacle on the direct route from Ili to Tarbagatai (Chuguchak) *via* Borotala.

Bridges.—There is a good wooden bridge across the river 3 miles south of the town of Borotala. This is fit for pack transport and probably for carts, but details are unknown.

Fords.—The river is swift-running but is fordable in winter at many points throughout its course. In December and January it is frozen and could probably be crossed on the ice. It is liable to floods in summer, when it would be impossible to ford.

THE EMIL RIVER.

This rises in the Tarbagatai range to the north-east of the town of Tarbagatai (Chuguchak) and flows westwards into Russian territory. It has a total length of 170 miles. This river forms an unimportant obstacle on the main cart road from Schiko to Tarbagatai (Chuguchak).

Fords.—This river is fordable everywhere. At the point where the main road crosses it, it is 30 yards wide and knee-deep in winter. It is probably frozen by the end of December.

THE BLACK IRTISH RIVER.

This rises in the Altai mountains and flows west by north some 40 miles east of the Uliungur (Kesil Bach) lake, and finally enters the Zaisan Nor, from which it issues as the Irtish. The Irtish river forms in Siberia a great trade route and on it steamers run. In 1913-14 proposals were made for continuing this steamer service south on to the Black Irtish, thus stimulating the trade between Omsk, Semipalatinsk and Kobdo. It is doubtful how far the Black Irtish is navigable, but steamers could certainly run beyond the Soviet frontier.

The only section of the river with which this report is concerned is that between a point north-east of the Uliungur (Kesil Bach) lake and the Soviet frontier. This section of the river forms the boundary line between Tarbagatai and Mongolia and is a serious obstacle on the route from Zaisan and Tarbagatai (Chuguchak) to Sharasume. These routes appear to unite before crossing the river. At this point the width of the river in winter is about 100 yards, but in summer the volume is very much greater and the river frequently overflows its banks, flooding the surrounding country.

Ferries.—The river is crossed by a ferry on the above mentioned route. No details of the ferry are available except that there is only one boat and the breadth of the river is about 100 yards.

Fords.—In the section under consideration the river is quite unfordable but it can be crossed on the ice by transport after the middle of December.

THE KITYN RIVER.

This rises in the Borokhoro mountains south of Schiko and flows north to a point some 40 miles beyond that town; it then turns east and finally flows into the Ebi Nor lake. Its only military importance lies in the fact that it crosses the main cart road from Urumchi to Ili near Schiko.

Bridges.—This road is said to cross the river by a bridge.

Tributaries.—Three tributaries of the Kityn river cross the main road. They are probably bridged and unimportant.

THE MANASS RIVER.

This rises at the junction of the Borokhoro with the main Thian Shan mountain range close to the Dundu Kelde pass.

For some 80 miles the river runs north-east through a mountainous country. Close to the town of Manass the river, entering the plain, turns north and finally makes a bend to the north-west, in which direction it continues until it flows into the Telli Nor lake.

This river crosses the Urumchi—Ili cart road a few miles west of Manass and forms an important obstacle.

Fords.—The river at this point is fordable in winter but, rising in a glacial district, is unfordable for most of July and August.

19. Lakes.

The more important of these are :—

(1) *The Zairam Nor*, in the region between the Iren and the Kirk-Terek hills just north of the Talki pass. This lake is about 20 miles long by 15 broad and is surrounded by high mountains. Its waters are brackish and undrinkable and fish are said to be unknown in it. The shores of the lake are precipitous and it is said to be of great depth. No important streams run into it.

(2) *The Ebi Nor*.—North of Chinho. This lake has a very large drainage area. Its most important affluents are the Borotala river from the west and the Kityn river from the east while it also receives the Dande Untun from the south. The waters of the lake are brackish and undrinkable. It is about 40 miles long by 25 miles broad. The shores to the south and west are flat and covered in places with a saline deposit while the country to the north and east is hilly. To the south-west lies the district of Kizil Tus, which consists of flat stretches covered with grass in the central parts, and boggy and swampy towards the shores of the lake.

(3) *The Uliungur Nor or Kesil Bach Lake*.—This lies on the extreme eastern boundary of Tarbagatai, all except its western shore being in Mongolia proper. It is 60 miles in length and its average breadth is about 20 miles. Its western shores are flat and to the east it is mountainous. Its chief affluent is the Urungu river, which joins it from the south.

(4) *The Olon Nor*.—This is a fairly large but unimportant lake situated north of Kucheng.

(5) *The Barkul lake*, a large salt lake north of the town of the same name. It is of no military importance.

20. *Climate.*

North of the Thian Shan the climate varies considerably in different districts. Generally speaking as one goes from east to west the climate gets colder and the rainfall increases.

To the east, in the neighbourhood of Barkul and Kucheng the country forms a continuation of the great Gobi desert and the climate is very similar to that of the Kashgarian plains but the summer is not so hot and the winter is more severe. All this part of the country is subject to biting cold winds during winter months, the climate is extraordinarily dry and the rainfall exceedingly small.

Further west, towards Urumchi and Manass the country is better watered and there is more rain. Here the summer is more temperate but the winter is more severe, often with heavy snow.

The valley of the Ili is sheltered and well watered. The climate is therefore very much less extreme than that of the rest of the province. The summer is temperate on the whole, but, particularly in the higher valley, there is liable to be a sudden change from hot to cold. In October, sharp frost may be expected and by the end of that month the first fall of snow usually takes place in the higher valleys. In the lower part of the district towards Kuldja and Suiting this early snowfall is represented by rain and snow does not fall, as a rule, till the end of November. In the latter part of December and January the snowfall is often very heavy and the frost severe, but the winter has not the arctic severity of the steppe country further north.

North of Ili, towards Tarbagatai, the climate is much more severe. In summer the days are hot, often changing with great swiftness to cold at night. About the end of September the first fall of snow may be expected. By the end of October hard frost begins to set in and, by the end of December and the beginning of January, even the largest and swiftest rivers are covered with ice sufficient to carry heavy carts and artillery. The winter is now of almost arctic severity and high winds and blizzards are frequent. About the end of March the ice and snow begin to melt and from then until May the rivers are swollen and often overflow their banks.

It should be remembered that, throughout the northern part of the province, the transition from summer to winter is very abrupt, and that there is none of the gradual change from summer to autumn and from autumn to winter which is so noticeable in more temperate countries. Professor Merzbacher in his notes on the central Thian Shan, gives it as his opinion that, for the last 10 or 13 years, the rainfall throughout the province has been increasing and that a comparatively moist period has commenced in Central Asia.

21. *Season for Military Operations.*

The best season for military operations north of the Thian Shan is from late spring till early autumn. The winter is too severe for protracted operations, but the summer, although the rivers are often swollen at this season, is comparatively mild, although the sun is hot.

22. *Diseases.*

As the population of the northern part of the province is largely nomadic, the health is in general good. In the larger cities, very much the same conditions prevail as in the Kashgarian basin, and the same diseases are prevalent. The climate is, however, cooler, and malaria is less frequent. During the winter, throughout the northern steppe country, frostbite and other diseases produced by extreme cold are common and means must be taken for their prevention. The diseases of the whole of the northern part of the province have been little studied and it is impossible, therefore, to give details of their nature.

CHAPTER III.

POPULATION.

Ethnographically as well as geographically the Thian Shan range divides the province into two parts—the basin of Kashgaria in the south, and the districts of Barkul, Kucheng, Urumchi, Tarbagatai and Ili to the north. The ethnography of each of these two parts is therefore described separately.

SOUTH OF THE THIAN SHAN.

I. *Numbers and Distribution.*

There is no accurate information regarding the number of the inhabitants of Kashgaria. The Chinese Government from time to time, for fiscal reasons, carry out an enumeration of the agricultural divisions subject to taxation, and at the same time information as to the number of houses in the district is collected.

This information, which is collected by the lowest grade of Government official—the “Begs”—under the supervision of the Local Government, is kept secret, as with it is indissolubly connected the private income of the head of any particular district, which is collected by him, over and above that laid down for that district by the chief authority of the Local Government. It is not always possible to make use of this information and it is also open to correction. In the literature on Kashgaria the following information is given as to the population at various times :—

Upon Chinese authority, at the beginning of the nineteenth century it reached . . .	700,000
According to Forsyth in 1873, including the oasis of Kunya Turfan . . .	1,015,000
According to Forsyth in 1873, excluding this oasis . . .	959,000
According to Kuropatkin in 1877, including the oasis of Kunya Turfan . . .	1,200,000
According to Prjevalski in 1884 . . .	2,000,000
According to Matusoff in 1888 . . .	750,000
According to Pevtsoff in 1890 . . .	2,000,000
According to the Chinese official data for 1902 . . .	1,200,000

Collating these data with the information collected by the Swedish traveller, Dr. Sven Hedin, about the separate districts of Kashgaria, and with that gathered during recent years by Russian officers, the population of Sinkiang can be reckoned as some 1,626,000 persons of both sexes. The total given is probably somewhat lower than the actual number of the inhabitants of the country, but in any case it is sufficiently accurate for all practical purposes. If we take the whole area of the country as about 325,000 square miles, the population works out to about 5 persons per square mile. But in the deserts there are no inhabitants at all, except a few hundred shepherds, who occasionally are met with in the forests of the Khotan river, the Keriya river, and the Tarim. Excluding the Takla Makan, in the belt of oases and mountains, where the whole population of the country is gathered, there are about 360 persons to the square mile. This population is increasing with great rapidity.

In 1919 the figures given for the population of Kashgaria according to its principal administrative districts, were:—

District.	Houses and huts.	Inhabitants.
Kashgar	63,940	319,700
Yangi Shar	45,700	228,500
Maralbashi	4,000	20,000
Yangi Hisar	24,700	123,500
Yarkand	41,100	205,500
Sariqol	990	5,000
Karghalik	31,600	155,000
Khotan	56,000	180,000
Keriya, Chirania, and Charchan .	5,400	27,000
Utch Turfan	4,200	21,000
Aksu	38,000	190,000
Kuchar	13,000	65,000
Karashar, Bugur, Khurla, and Lop Nor.	17,100	85,500
Total	345,730	1,625,700

In 1924, the total was probably well over 1,700,000 ; in a publication by the Chinese Directorate-General of Posts, of Provincial Estimates for 1923, it is given as 2,519,579.

The inhabitants of the country, according to their habits may be divided into settled, nomads, and semi-settled or pastoral. The nomads, who include the Mongols and Kirghiz, live on the inner slopes and in the valleys of the frontier ranges from the Little Yulduz in the north-east to the sources of the river Sanju in the south. The semi-settled population consists of the dwellers in the valleys of the Upper Yarkand or Raskam river, the Upper Tiznaf and its tributaries, the Tagliks in the Kuen Lun mountains on the southern frontier of Kashgaria, and the shepherds in the forests of the Khotan river, Keriya river, and Tarim.

Tagliks (highlanders) is the term applied by the settled inhabitants of the country to the natives who herd the flocks belonging to the dwellers in the oases. This employment is passed on from father to son, so that many generations of Tagliks spend the whole of their lives among the mountains. The Tagliks during the summer live with the flocks on the high mountain pastures, but towards winter come down into the lower levels of the valleys, and on to the northern foot hills of the Kuen Lun, where they dwell in caverns or mud huts. Near their abodes are usually a few small patches of barley, for the watering and reaping of which some of them remain behind in the summer.

The majority of the Tagliks are concentrated in the mountains between the sources of the Yurungkash and Keriya rivers ; from here towards the north-east, the density of the pastoral population gradually decreases. In round figures, the nomads and semi-settled inhabitants of Kashgaria do not exceed 125,000 persons (including some 88,000 nomads), so the total settled population is 1,500,000 souls. The settled population is concentrated in the sub-mountain belt and in the oases.

The oases of Kashgaria occupy a small area, in comparison with the total area of districts or provinces in which they are included ; therefore the density of the population per square

mile in the oases is very much higher than that in the provinces and districts, thus—

Oases.	Area in square miles.	Inhabitants per square mile.
Aksu and Uteh Turfan	700	301
Maralbashi	100	200
Kashgar (and Yangi Shar) . . .	1,100	8,472
Yangi Hisar	250	494
Yarkand	530	388
Karghalik	180	850
Khotan	450	400
Chira, Kerial Nia, and Charchan .	180	150

These approximate data show, by the greater density of settled inhabitants, that the oases of western and northern Kashgaria are the favourite regions, while in southern Kashgaria the density of the population markedly diminishes, towards the east. The population of the southern oases has, however, of recent years shown a marked increase.

As regards the division of the inhabitants into sexes, data is only available for some individual districts.

The enumeration lists in 15 villages of the Yangi Hisar district show that in these villages, out of 20,459 persons, 10,373 were males and 10,086 females; consequently for every 100 men there are 97.2 women; such a proportion of the sexes, according to some investigations, is common among all the agricultural population of the country; in the towns, however, especially in such crowded centres as Kashgar, Yarkand, and Khotan, a great preponderance of women is noticed. But taking into consideration that the town population consists of not more than 15 per cent. of the whole population of the country, we may assume that the males predominate.

2. Races.

The numbers and percentages of the different races inhabiting Kashgaria are approximately :—

		Per cent.
Eastern Turkomans or Sarts .	1,456,000	89.5
Kara Kirghiz	43,000	2.6
Mongols	45,000	2.8
Tungans	25,000	1.5
Dulanis	30,000	1.8
Tajiks	13,000	0.8
Chinese	6,000	0.4
Western Turkomans or Sarts .	3,000	0.2
Indians	5,000	0.3
Gypsies	1,000	0.1
Total .	1,627,000	100

The majority of the settled inhabitants of Kashgaria are the descendants of the ancient aborigines of the country, who were undoubtedly of Aryan origin, and who have mixed with the tribes which arrived later. The various conquerors of the country, Arabs (who penetrated here at the beginning of the 8th century), Mongols, and Chinese, have left their traces, so that among the people there is no general, all-pervading, ruling type; but signs appear of one or another of the mixed races.

In southern Kashgaria, traces of the Aryan type have been well preserved; in the western districts, the Turkoman predominates, and in the oases of northern Kashgaria (commencing with Aksu) the Mongolian; while in the districts adjoining China, the latter gives way to the Chinese type.

These racial differences, in conjunction with the geographical fact of their distribution into oases, which are separated by wide deserts, have brought about the result that the settled population of Kashgaria have no knowledge of national unity, but regard themselves as members of various tribes which correspond with the oases inhabited by them, *e.g.*, Kashgaris, Yarkandis, Khotanis, etc. For these reasons, Sinkiang has always proved an easy prey to the foreign conqueror; and the Chinese, after the insurrections, always succeeded, without any special effort, in re-establishing their rule in the country.

Very rarely does one hear the term *Erlük*, "a native of" or *Alti Sharlik*, which is literally, "an inhabitant of the six cities." The latter term is employed chiefly by Ferghana Sarts. The Chinese call the settled population of Kashgaria *Chan Too*, which means "Turban wearers."

THE SARTS.

In European literature about Kashgaria, also, there is no generally used term for the settled inhabitants of the country. Kashgarian is used, as also Djete-Shars and Alti-Shars, but most generally Eastern Turkomans. A more convenient term than Turkoman and one now in general use is *Sart*. This is a Russian word derived from the Persian, and it will be convenient to use the expression Eastern Sart, for the Turkoman tribes inhabiting Kashgaria.

EASTERN SARTS.

The Eastern Sarts are at present a peaceful, kindly people, distinguished for hospitality, readiness to oblige, and their inclination towards a quiet, family life, but the harsh conditions of life in their country have developed among them covetousness, hypocrisy, servility, and an extreme obedience to authority, which borders on a dull indifference.

To this same mixed breed belong, in origin, religion and language, the Tagliks of the Kuen Lun, and the pastoral population in the forests of the Tarim, Khotan, and Keriya rivers.

THE KARA KIRGHIZ.

The Kara Kirghiz, who number about 43,000 of both sexes, occupy the mountain districts of Kashgaria—roughly from the meridian of the town of Kuchar on the north, to the sources of the river Sanju on the south; they call themselves Kirghiz, but the Chinese call them "Bruts."

All the Kirghiz of Kashgaria are nomads, and belong to the Sunni sect of Mohammedans; they talk a special dialect of the Turki language; as regards their origin, they are related to the nomad Kirghiz of Ferghana, and Semerchensk, and a considerable part of them emigrated from Ferghana, comparatively recently, during the last years of the independence of the Khokand Khanate. The Kirghiz of Kashgaria, like those of Semerchensk and Ferghana, are formed into two

large tribes of the Otuz-Ogul and Ichkilik, who in their turn are sub-divided into small divisions and races. For administrative purposes the Chinese have organized the Kirghiz into "Begships," which do not correspond with the tribal divisions. The "Begships" are named after the rivers, valleys or more important localities, occupied by the nomads or by their winter camps.

The principal occupation of the Kirghiz is cattle-breeding, but some, in addition to this, occupy themselves with agriculture, although to a very limited extent. Their nomad life, and the barrenness of the mountains on which they live, have produced in them a bold, enterprising character, and the ability to find their way about, in any locality, and under any circumstances.

THE MONGOLS.

The Mongols of the Karashar District are divided into two tribes, the Torguts and Khoshuts; the first number from 30,000 to 33,000, and the Khoshuts from 10,000 to 12,000. In the summer, from May to September, both these tribes wander in the mountain valleys of the Great and the Little Yulduz which are celebrated for their excellent pasturage; in the autumn they come down into the Karashar basin, and till spring they remain with their flocks in the thickets of coarse grass and reeds which bound the northern shores of Lake Bagrash Kul.

In the winter the Mongols occupy themselves in catching fish in this lake. A small part of the Torgut tribe live the whole year round on the steppes close to Karashar, and occupy themselves with agriculture.

The Mongols are Buddhists in faith. This religion, with its foundation on the futility of all earthly life, and with its strivings toward the destruction of all individuality, has long since destroyed in the Mongols all those military instincts which were such a distinct trait of the character of their ancestors in the time of Jenghiz Khan, and has made the present-day Mongol a peaceful nomad, altogether averse to any attempt to better his condition.

THE TUNGANS.

The Tungans, who are called by the natives "Tunganis," are representatives of a people whose origin up to now is not

quite clear. The Tungans themselves say sometimes that they are the descendants of Arabs, and sometimes that they are the descendants of the warriors of Jenghiz Khan and Tamerlane, who remained behind in China after the departure of the conquerors, and who married Chinese women. They derive their name from the Turki word "Turgan" (those who remained behind). European savants are divided in opinion on the question; some affirm that the Tungans are the descendants of the Uighurs, a people of Turkoman origin who lived in Eastern Turkestan in the 1st century of the Christian era, a part of whom in the 13th and 14th centuries was forced by the Chinese to emigrate into the provinces of Kansu and Shensi, and there in the 14th century embraced Mohammedanism, which had penetrated from Kashgaria; others say that the Tungans are the descendants of the natives of Samarkand, Bokhara, and other towns of the Turko-Persian west, and were brought there as slaves, and forcibly settled by the Mongols in the frontier districts of China; finally, others consider the Tungans to be genuine Chinese by descent, but who had adopted Mohammedanism, and they derive the name from the Chinese word Ten-Djen, which means "Military settlers." Whatever may be their origin, they, in consequence of their long association with the Chinese, have adopted from the latter their language, dress, customs, and outward appearance, but in their physique they differ somewhat from the Chinese, as the Tungans in general are taller, stronger and better made.

In religion the Tungans belong to the Sunni sect of Mohammedans. Religious differences and the march of events have made enemies of the Tungans and the Chinese, and they look on each other with undisguised hatred. The Tungans were ruthlessly suppressed by the Chinese in two great rebellions in 1871 to 1876 and in 1895, and they speak openly of a day of revenge.

In Sinkiang, however, the revolution of 1912 has brought about a marked improvement in the relations between the Tungans and the Chinese authorities. Indeed, it was by the use of the Tungans, whom the Provincial Governor enlisted in large numbers as soldiers, that the Chinese rowdies were kept in check. Tungans are now employed largely both in the civil and military services.

A considerable part of the Tungans, who are at present living in Kashgaria, had settled there before the rebellion, but

the majority have come during the last two decades from the provinces of Central China, Kansu, and Shensi:

All the Tungans live a settled life, principally in the towns; they occupy themselves with agriculture, gardening, horticulture, trade and as artisans; a few serve in the army. In Kashgaria they are met with everywhere, but the majority are concentrated in the Karashar District, in the neighbourhood of Karashar, and around Kara Kul, on the lower reaches of the Konche river. In the latter locality the Tungans, to the number of 3,000 families, came from the province of Kansu after the rebellion of 1895; part of them settled here voluntarily, having escaped from their permanent abodes along the mountains, through Sining and Sachow; a part even came with the permission of the Chinese Government. The settlers were given arable land, but owing to bad harvests, and unproductive soil, their affairs did not prosper. About 1,000 families have already emigrated from Kara Kul, and have scattered themselves in the neighbouring provinces and districts. At the present time the number of Tungans among the population of Kashgaria is estimated to be:—

	Houses.
Karashar oasis	2,000
Kara Kul locality	2,000
Khurla oasis	200
Kuchar	105
Aksu.	55
Uteh Turfan	65
Maralbashi	15
Yangi Shar and neighbourhood	110
Kashgar	15
Yangi Hisar	3
Yarkand	35
Karghalik	3
Khotan	34
TOTAL	4,640

Altogether 4,640 houses, or calculating five persons per house, from 23,000 to 25,000 of both sexes.

THE DULANIS.

The origin of the *Dulanis* or *Dulans* also is not very clear. The greater portion of them, about 4,000 families, formerly lived a settled life in the Maralbashi district, while about 2,000 families live in the Aksu and Utch Turfan districts. Very few, however, are now left round Maralbashi, for they have now migrated, the majority having gone to the Merket oasis. According to one authority the Dulanis are descendants of prisoners brought in the 4th century, Hejira, by Sultan Haroun Bogra Khan, from what is now Soviet Turkestan. According to another authority, they are Mongols who settled in Kashgaria 170 to 180 years ago, when the Jungars or Kalmuks were rulers. The last supposition is probably the more correct as the Mongol type is well preserved among the Dulanis, especially among the women, and besides, in their customs, and in the motive of their songs, one can trace evidence of their Mongol origin.

They use a dialect of the Turki language, slightly different from the speech of the inhabitants of the oases of Kashgar and Yarkand. They are Sunni Mohammedans.

THE TAJIKS.

The representatives of the Aryan races in Kashgaria appear to be the *Tajiks* of Sariqol, the *Wakhis* (settlers from Afghan Wakhan) and the inhabitants of the three mountain "Begships" of Shikhpu, Pokhpu, and Chipan, in the south-west portion of the Karghalik District. The Sariqol-Tajiks ("Galcha") or Sariqolis as they call themselves, lead a settled life in the Tash Kurghan, Tagharma, Vacha, and Mariong valleys, and along the Yarkand river from the Mariong to Kosarab. In 18 villages occupied by these tribes, there are about 850 houses, or about 4,500 people of both sexes. In their origin, the Sariqolis are related to the Tajiks of Wakhan, Shignan, and Roshan; they speak a special dialect of old Persian, having a general resemblance to the dialect of the people of the above-mentioned districts, but with some peculiarities. In religion they are Shiah. Among the inhabitants of the Tash Kurghan and Tagharma valleys typical Tajiks are met with, that is, people of tall stature with large bushy black beards and sharply defined, curved eyebrows; one meets also types

which clearly show Kirghiz blood. In the remaining valleys of Sariqol the characteristic marks of the inhabitants seem to be a thick, broad body, with flaxen hair and grey eyes.

The Wakhis, who live in small villages in the valleys of the Kilian and Upper Tiznaf rivers near the Takhta Kuram, came as settlers to Kashgaria from Wakhan at the end of the last century; in addition to these, about six or seven years ago, about 35 miles to the south of Tash Kurghan in Sariqol, Afghan exiles from Wakhan founded the settlement of Dabdar (Dehda) in which there are now about 40 houses. The total number of Wakhis in Kashgaria is about 600 to 700 persons of both sexes. Their customs and language do not differ from those of their kindred in the valley of the Upper Panja, and like them they are Shiah Mohammedans, and are followers of the Agha Khan.

The inhabitants of the "Begships" of Shikhpu, Pokhpu, and Chipan (which are situated in the south-west mountain districts of the Karghalik District, among the deep, inaccessible valleys of the Asgan Sal, the Upper Tiznaf and its tributaries, the Pokhpu, the Chukush, Yylung, Bulung, Usus and Gusos) are undoubtedly the descendants of an ancient people who saved themselves from extermination, or mixture with other races, by the inaccessibility of the localities occupied by them. Amongst these mountain tribes one very often finds people with fair or reddish hair, and grey eyes, which show their connection with the Tajiks of the neighbouring valleys of the Yarkand, Vacha, and Mariong rivers. Like the other natives of Kashgaria, these mountaineers speak the Turki language, but among them there is a special dialect, which, judging by the names of villages, mountains, rivers, etc., differs considerably from the Persian language and from the dialects of the Tajiks of Sariqol. In religion the mountaineers of Shikhpu, Pokhpu, and Chipan are Mohammedans of the Shiah sect. Their totals are—

	Villages.	Houses.
"Begship" of Shikhpu . . .	5	600
"Begship" of Pokhpu . . .	5	700
"Begship" of Chipan . . .	6	250
	<hr/> 16	<hr/> 1,550

with a population of about 8,000.

Probably to the same race belong those mountaineers who inhabit the inaccessible ravines of the Kara Kash river below Ir-Nazar-Kurghan, and the Nisa river, a tributary of the Yurung Kash.

The settled inhabitants of Southern Kashgaria call these mountaineers "Pushpa," and declare that they speak a language totally different from the Turki and Persian languages.

The Tajiks of Sariqol live a settled life collected in the broad parts of the valleys, in somewhat crowded villages, and occupy themselves with agriculture, and also with cattle-breeding. At the beginning or middle of May the majority of the inhabitants of the Sariqol valleys go with their flocks to the upper valleys, where they remain till the autumn, leading a nomad life; in the villages only the poorest people who do not own cattle are left; among the Wakhis of Kashgaria and the mountaineers of the Tiznaf, on the contrary, cattle-breeding is the principal occupation, and agriculture only a secondary one. They live in small villages, in the winter in mud huts, or cottages made of stone, in the summer in tents; somewhere or other in the neighbourhood are patches of ground planted with barley. The cattle usually graze the whole year round on the neighbouring mountains. At night they are brought down to the villages. These tribes only wander from place to place with their flocks and tents on those rare occasions when no grazing is available in the immediate neighbourhood of their settlement on account of drought.

Major Greenhill Gardyne wrote "I found the Sariqolis everywhere exceedingly friendly.....and invariably ready to help in every way with transport, supplies, guides and information."

THE CHINESE.

The Chinese constitute about 6.4 per cent. (4 per cent. according to Lt.-Col. Etherton in April 1922) of the population of Kashgaria. At the end of the seventies, in the last century, on the re-establishment of Chinese authority in Kashgaria, the Chinese Government, recognizing the weakness of their local position, took energetic measures for the strengthening of the Chinese element in the pacified districts, in order to form local contingents for the completion of their army. With this object they tried to introduce colonists from the interior of China

into the country and to detain retired soldiers by gifts of land, by grants of money for building houses, and by freeing them, for a time, from rates and taxes; in Zungaria the efforts of the Government in this direction met with considerable success; but as regards Kashgaria the colonising progresses very slowly although it cannot be said that a lack of unoccupied land was an obstacle to its success. Upon the re-establishment of the authority of the Chinese in Eastern Turkestan, all the land belonging to Yakub Beg, his Government, his adherents, and all the principal people who took part in his insurrection, and all the estates which were unclaimed, after the measuring up of the private property, became the special property of the Chinese Government; this gave them a considerable quantity of land, which they could use for their colonising scheme, but the distance of Kashgaria from the interior provinces of China and the constant fear of revolts, which in former times were always accompanied by a general massacre of the Chinese, greatly hindered the immigration of Chinese settlers into the country. Not counting the officials, the army, and, generally speaking, the servants, the Chinese in Kashgaria are traders, usurers, and artisans; there are very few Chinese peasants in the country who own land and are employed in agriculture, the greater part of them is concentrated in the neighbourhood of the new city of Kashgar. Here, on the lands, confiscated and handed over to colonists on lease, are 445 Chinese families, the majority of whom are old soldiers who served in the Taifurn Army * of Yakub Beg.

Every year more retired soldiers of the Yangi Shar and Kashgar regiments arrive. In round numbers the Chinese population in Kashgaria—settlers, traders and artisans, but not counting the army and officials—amounts to 1,200 families or about 6,000 persons of both sexes.

The traders and artisans usually settle in the principal fortified towns of the country; in the Mohammedan portions of the towns they live in separate quarters, but in villages they mingle with the natives; the settlers live in scattered farm houses in the vicinity of the larger towns. Out of the numbers given

* The Taifurn Army of Yakub Beg was raised from Chinese soldiers who saved their lives at the time of the rebellion in 1863-64 by changing their religion. When the Chinese invaded Kashgaria, this army deserted the son of Yakub Beg, Beg Kuli Beg, and having seized the fort of Yangi Shar surrendered to the Chinese, and at the same time returned to their former religion.

above, about 610 families live in the fortress of Yangi Shar and its suburbs, and in farmhouses and villages of the district. The rest of the Chinese population is scattered among the other towns of Eastern Turkestan as follows :—

	Houses.
Kashgar and district	150
Yangi Hisar	30
Yarkand	105
Khotan	44
Utch Turfan	30
Aksu	50
Kuchar	30
Karashar	45
Lop (Dural)	30

ANDIJANIS.

In addition to the above-mentioned nationalities there are in Kashgaria also from 470 to 500 families of *Andijanis*, as the natives call the Sarts from Soviet Turkestan. Some of them had come here previous to the time of Yakub Beg, some came with him, the remainder came later, as clerks and agents of Ferghana merchants. With a few exceptions, they are Soviet subjects. Scattered among the more important centres of Kashgaria, the Andijanis are the principal agents of Soviet trade, being middlemen among the natives, consumers of Soviet productions, and traders from Ferghana and Semerchensk. Some of them own land, and are engaged in agriculture and gardening. The Russians, prior to 1917 (and the policy has again been taken up by the Soviet Government but so far with no success) did everything in their power to encourage all who have the slightest claim to be Russian subjects, to register themselves as such.

INDIANS.

The total number of Indians in Sinkiang is (1927) 786, divided into the following classes :—

Moslems	641
Hindus	139
Sikhs	6

The Moslems come from the North-West Frontier Province, Kashmir, and the Punjab. The Hindus all come either from Hoshiarpur in the Punjab or from Shikarpur in Sindh. The Moslems may be divided into two classes, original or first generation immigrants, who are traders, and second generation subjects, who are mostly settled on the land as small farmers and cultivators.

The Hoshiarpur Hindus are chiefly traders working on behalf of capitalists residing in the Punjab. Each trader brings in goods to the value of Rs. 20,000 to Rs. 50,000 and returns to India every second year to render accounts to his principal and arrange for a new supply of trade goods. The Shikarpur Hindus are traders and money lenders who become practically permanent residents of this country. The few Sikhs are employed as cooks by some of the Hindu traders.

About half the Moslems settle down in the country and, as above mentioned, most of the Shikarpur Hindus also settle there. The important difference is that the Moslem's descendants are soon almost indistinguishable from the local population, whereas the Hindus cannot contract any legal or recognised unions with women of Sinkiang. Ordinarily, registration certificates are not issued by the British Consul-General, except in concert with the local Chinese authorities.

The Moslems follow their co-religionists of the local population in taking practically no interest in politics. The Hindus are so centred in their money making that they have little interest to spare for other matters. This lack of political interest is now, perhaps, gradually changing and some, including a very few of the younger Moslem traders, now get newspapers sent to them regularly from India and discuss their contents. But their interest is a somewhat detached one and their political tendencies, so far as they exist, may be described as strictly moderate.

AFGHANS.

There is also a number of Afghans, who however have not been registered by the British Consul-General since 1921, and since 1923 the newly established Afghan Agent and self-styled Consul-General has been busy registering.

RUSSIANS.

The Russians in Sinkiang (not counting the staff of the Soviet Consul-General in Kashgar, the members of the Russo-Asiatic Bank and the clerks of the trading firms) are merely travellers. Practically none of them are permanent residents. But in 1858 to 1860 a Russian village was founded on Lop Nor by the "Old Believers," who came apparently from Altai, from the sources of the Yenesei or Ulukem. This village, after it had existed for two years, was destroyed by order of the Chinese Government, and the inhabitants, according to one authority, were forcibly carried off to Turfan, but according to another they voluntarily went towards the north.

The Russians belonging to the Russo-Asiatic Bank (the headquarters of which are now in Paris) and those employed in the trading firms are still, for the most part, anti-Soviet and have not been persuaded to register themselves as citizens of the U. S. S. R. notwithstanding constant attempts on the part of the Soviet Consul-General to enrol them. They consequently remain under Chinese protection. There is also a large number of White Russian refugees in the Kuldja and Urumchi districts. The latter are also under Chinese protection but it is exceedingly difficult for them to obtain employment and many are in a pitiable condition.

Details with regard to the fluctuation of the population do not exist, as there are no registers of births or deaths. But there is no doubt that the population is increasing, as is shown by the fact that new villages and settlements are springing up, and the older ones are becoming bigger. The variation in the population depends principally upon natural increase, the additions to the population from neighbouring districts being inconsiderable. If we omit the already mentioned immigration of the Tungans in Kara Kul, and some hundreds of families from the oases of Turfan and Lukchun, who have settled in the new town of Dural (Sin Chen), the yearly additions are limited to some ten families of Chinese and Tungans, who immigrate into the eastern districts of Kashgaria. Emigration is still very restricted. Emigration of the settled natives is limited by an order forbidding native women to leave the country; the nomads, as we have seen before, have considerable independence and freedom from taxation, which not only stops their emigrating, but often forms an attraction for the Kirghiz of the Russian Pamir and Ferghana districts.

3. Religions.

The bulk of the population are Sunni Mohammedans, and of the Hanifite rite but their religion sits very lightly on them. Even in the time of Yakub Beg the Mullahs did not have the predominating influence on the Government of the country, or on the life of the people, that they have in other Mohammedan countries.

The few Shiah consist almost entirely of the Sariqol Tajiks, and the mountaineers of Shikhpu, Pokhpu, and Chipan.

The Mongols are Buddhists, and the Chinese are followers of Confucius, with an admixture of Buddhism and Taoism.

The following table gives roughly the percentages of the population according to the religions :—

	Per cent.
Sunni Mohammedans	96.0
Shiah Mohammedans . . . . .	.8
Buddhists	2.8
Confucians . . . . .	.4

Foreign Missions.—There have been Swedish Religious Missions at Kashgar and Yarkand for the last 34 years (1928), but they have never had more than a dozen converts at a time.

4. Languages.

The whole of the settled population of Kashgaria speaks the Uighur dialect of the Turki language. In this dialect are incorporated many old Persian, Arabic, Chinese, and Mongol words, but at the same time the roots, form, and turn of the pure Turki tongue are preserved much better than in the dialects spoken by the Uzbeks of Soviet Turkistan. There exist minor variations of the language in the different oases, but chiefly in the manner of speaking and pronunciation. The Yarkand and Khotan people, for example, speak quickly, clipping the terminations, and do not pronounce the letter "r;" the Kashgaris accentuate the "o." In general, the differences are so small that the natives of the most distant localities of Kashgaria can understand each other perfectly freely; the inhabitants of Soviet Turkistan would understand most readily the Kashgar dialect.

The official language of the country is Chinese, and as the Chinese officials either are, or pretend to be, ignorant of the Turki language, they always employ Mohammedan interpreters.

The Mongols use the Mongol language which is common to the people of the whole of Mongolia.

NORTH OF THE THIAN SHAN.

5. Races.

North of the Thian Shan range, in the neighbourhood of the great north road, in the Ili valley and round Tarbagatai (Chuguchak) a settled population of Sarts and Chinese prevails. North and south of the great north road, in the steppe country and the northern slopes of the Thian Shan the population is entirely nomadic. The principal races inhabiting the northern parts of the province are:—

THE SARTS.

These have already been described in dealing with the inhabitants of the Kashgar basin. North of the Thian Shan the Sarts are the prevailing element in all the larger towns west of Manass, of which they comprise at least 75 per cent of the population, and in the plains wherever cultivation exists. In the towns they are traders and merchants, and in the fertile plains and larger valleys they go in for agriculture. This is especially the case round Kuldja in the Ili valley, where they are known as Taranchi or tillers of the soil.

Taranchis owe their designation to the pursuit of agriculture, and they were imported from Kashgaria to Ili in 1756 as part of the new population destined to fill the devastated territories of Jungaria after the revolution at that time. They profess Mohammedanism, and in this respect, as well as in type, culture and language they stand very near to the Turkis; the only difference seems to be in regard to the women who have greater freedom than among the Turkis, and do not cover their faces. The Taranchis are agriculturists, cultivating especially vegetable gardens; some of them inclining towards commerce.

THE CHINESE.

Chinese colonies are to be found in all the important towns, the largest being at Urumchi, which has the appearance of a

Chinese city. In addition to these townsmen, who are chiefly merchants, more Chinese are every year taking up agricultural land in the neighbourhood of the large centres, so that now in the neighbourhood of Tarbagatai and in the Ili valley, a very high proportion of farms is held by Chinese. Unfortunately a very large proportion of the Chinese immigrants is of the worst possible class, being deported criminals. Nevertheless Chinese peasants of a good class are undoubtedly on the increase, and by their thrift and enterprise are gradually getting a firmer grip on the soil.

RUSSIANS.

In the northern part of the province there is a large Russian element. Russians are most in evidence at Tarbagatai (Chuguchak) and at Kuldja, while on the northern border, prior to the Russian revolution, a good deal of trouble was caused to the Chinese authorities by the encroachment of Russian Kazaks who, in case of trouble, are almost always backed up by their own consuls. In Kuldja there is quite a large colony of Russians consisting of No-Hai Tartars from Kazan, besides Russian Sarts and a few European Russians. The Russian in this part of the world, however, is not a good colonist, for instead of raising the native to his own level, he appears more often to fall to the level of the native. Nevertheless, by diplomatic means, Russia is increasing her influence and the inhabitants are encouraged to register themselves as Russian subjects on the smallest grounds.

THE MONGOLS.

The Mongols of Sinkiang may be divided into three sections :—The Torguts, the Öluts, the Charkhars.

The Torguts are a remnant of the once important tribe who were driven out during the ascendancy of the Jungars towards the end of the 17th century.

Then they settled on the steppes of the Russian Volga, but in 1771 took place the migration of all the Kalmuks there established, to the number of nearly half a million, back to Jungaria and the Thian Shan districts of Chinese Turkestan, a trek immortalised by De Quincey in his "Flight of a Tartar Tribe." This celebrated journey surpassing that of the great Boer trek from Cape Colony in 1836 to the country north of the Orange and Vaal Rivers, occupied eighteen months, during which

the Kalmuks suffered many vicissitudes through the hostility of Kirghiz and Russians whose territories they were traversing. Towards the close of 1771 they reached Jungaria, or Ili, then recently conquered and depopulated by the Chinese. Here they were in hopes of finding a permanent place of settlement and of forming an independent kingdom. In this they were disappointed for the Chinese had just taken over the land; so two alternatives were given them—either they must become subject to China or be turned back on to the Kirghiz and Russians now hard upon their trail. They chose the former and were accordingly permitted to settle in the Kunges and Tekkes valleys of the Thian Shan (the Tarbagatai region) where ample pasturage was available for their immense herds of cattle.

The *Öluts*, who are often known as *Kalmuks*, formerly held all the country between Tarbagatai and Ili which was then known as Jungaria. From this they were gradually ousted and finally took refuge round the valleys of the Tekes, Kunges and Yulduz, where ample pasturage was available for their large herds of cattle and horses. They appear to be a very decadent race and are said to be decreasing before their more vigorous and enterprising neighbours. They are almost purely nomadic and rarely if ever adopt agriculture. In religion they are Buddhists and often make pilgrimages to Lhasa.

The *Charkhars* who inhabit the Borotala valley were once a ruling race in southern Mongolia outside the great wall. The Chinese greatly feared them, and, when opportunity occurred, broke their power and transported them in bulk to the furthest corner of the Empire. The Borotala valley was given them as a reservation. They appear to be a superior race to the rest of the Mongols, both physically and morally.

THE KIRGHIZ.

These are a tribe of Turkish origin and are scattered throughout the whole of Central Asia from the Altai to the Aral Sea. They are often known as *Kazaks* (the original of Cossack, meaning robber) or *Buruts*.

They are supposed to have originally occupied the country at the sources of the Amur and to have been driven thence by the Khitans, retiring south towards the Hwang Ho. Subsequently they became part of the great Naiman empire which extended from the Kerulun to the Altai. On the break up of

this Empire, the Kirei section of the tribe became a ruling race and embraced the Nestorian form of Christianity. Their most famous ruler was the fabled Prestor John of European legend. Their power was overthrown by Jenghiz Khan and they drifted westwards with his conquering armies. About this time they became converted to the Mohammedan religion, to which they still hold, and to which they no doubt owe their superiority over the neighbouring Mongol Buddhist tribes.

In Sinkiang the Kirei section of the tribe is by far the most important. At present the range of this includes the banks of the Black Irtish, whence they extend right across the central steppe country to the Thian Shan, south of Urumchi. An allied section also extends westwards from the Irtish along the Soviet-Chinese border to the Emil valley, and south through the Muile and Barluch hills. The Black Irtish section of the tribe are under the Amban at Sharasume while the western section is under the Taotai of Tarbagatai. Each of the sections is also ruled by a native prince.

Some of the tribesmen are Soviet, others Chinese, subjects, and as they drift across without any consideration for the frontier line, they are the cause of considerable friction between the Soviet and Chinese authorities.

In their manners, customs, and civilisation they are far superior to the Mongol nomads. They appear to be very well off on the whole, owing large flocks of sheep, and herds of cattle and horses, but only a few of them have exchanged a nomad for a sedentary life. Round Tarbagatai a few of them have, however, taken to agriculture.

There are a few Kirghiz belonging to tribes other than the Kirei, at the head of the Tekes valley and along the Thian Shan range.

Both the *Kazaks* and *Kalmuks* are forces to be reckoned with—all of them fine horsemen with innumerable first class ponies at their command, many of them hunters for generations, they might resemble the Boers as a fighting force in any form of guerilla warfare.

It is doubtful, however, if they have much ammunition (1924). Both rifles and ammunition are Russian and are bought by the Kazaks and Kalmuks in Kuldja.

Kazaks and Kalmuks appear to have no respect for the Chinese and could probably easily be made allies against them.

CHAPTER IV.

RESOURCES.

1. *Agriculture.*

SOUTH OF THE THIAN SHAN.

The principal occupation of the settled inhabitants of Kashgaria is agriculture; after this come cattle-breeding, market gardening and other branches of farming, handicrafts and trade.

Land under Cultivation.

Agriculture in the Kashgar basin is carried on under unfavourable conditions, principally on account of the smallness of the rainfall and the unsuitability of the land. The greater part of the surface of the country consists of mountains and saline, sandy, rubble-strewn deserts. The deserts, owing to the lack of water, exclude for the present any possibility of agriculture, but there is little doubt that, given the necessary skill and labour to make use of the existing water supply, the area of cultivation in the desert might be almost indefinitely increased. In the mountains, soil suitable for agriculture is only met with in small patches, in the high upland valleys of Sariqol and Raskam, and in the wider parts of the river ravines. Agriculture is limited to the oases, and the area of the latter consists of only 1-75th of the total area of the country. The amount of agricultural land (including irrigation channels, roads and boundaries) per house in the oases is roughly as follows:—

In the oasis of	Kashgar	.	.	4·05 acres per house.
Ditto	Yangi Hisar	.	.	3·78 ditto.
Ditto	Yarkand	.	.	4·59 ditto.
Ditto	Karghalik	.	.	5·13 ditto.
Ditto	Khotan	.	.	8·19 ditto.
Ditto	Keriya	.	.	18·90 ditto.
Ditto	Nia	.	.	13·50 ditto.

There is no information available regarding the other oases, but we may assume that the area of land per house does not differ much from the above. Excluding the area occupied by buildings,

gardens, roads, etc., the arable land in the first four oases does not exceed from $2\frac{3}{4}$ to $3\frac{1}{2}$ acres per house; in the oases of Khotan, Keriya, and Nia it is perhaps rather more, but the soil there is less fertile.

In order to increase the area of land suitable for tillage, the people in places cleared away the forest belt, and ploughed up the loess hillocks on the borders of the Takla Makan desert, but unfortunately the natural conditions of the country place a limit to the utilisation of these resources. The clearing of the forests threatens the existence of the oases themselves, as it results in an advance of the sands of the neighbouring deserts. The great obstacle to the increase of the area of arable land is the difficulty of watering the new parts.

In the oases of Yangi Hisar and Kashgar other measures are practised. In the autumn, the water, which is not needed for the fields, is led on to the sand and inundates the hollows between the sand dunes. The fertile silt brought by the water gradually fills up these hollows, and their edges are planted with willows and other quick-growing trees and bushes, in order to protect them from being overwhelmed by the sand. In this manner, in the course of three or four years, a belt of fertile land is formed. However, the application of this method demands considerable expense in the making of channels, and is also not everywhere possible on account of the varied nature of the localities. The nature of the soil and the climatic conditions in Kashgaria are less favourable to agriculture than they are in Soviet Turkistan.

Another circumstance unfavourable to agriculture is the non-coincidence of high water in the principal rivers of Kashgaria with the time for sowing and watering the crops.

Irrigation System.

The irrigation system of the country, which has existed from ancient times, is extensive, but is very primitive. The water-wheels, pumps, and other appliances, which are commonly used in Central China, and which convey water on to the fields when the rivers are at their lowest level, are here unknown, as is also the Persian wheel, which is widely used in Eastern Persia, and which can raise water from the deepest levels.

The irrigation system of each oasis consists of some large canal led out from the rivers by means of dams and which, divid-

ing up into a number of small channels, brings water directly on the fields and gardens. This system, in consequence of the low level of the rivers in early spring, cannot give the fields a sufficient supply of water and secure them from drought. The glaciers of the mountain girdle, however, form an almost inexhaustible reserve of water, and modern irrigation and storage works would allow of an almost unlimited increase in the amount of cultivation. At present, the chief obstacle to cultivation is not so much the lack of water, but the lack of skill and of population which prevents anything like full use being made of the existing supply.

Grain.

The chief food grains cultivated in Kashgaria are maize, wheat, barley, *jowari*, common millet, rice, and peas. Of these maize predominates; it probably occupies no less than 50% of the total area of arable land; then follows wheat, about 30%. Barley is little sown in the oases, as the cattle are generally fed on maize. *Jowari*, millet and peas also are little sown. Rice is only cultivated in those places where there is an abundance of water, such as the valley of the Yarkand river near Yarkand, the Kizil Su below Kashgar, and the Aksu river close to Aksu. The best rice is grown in the oasis of Aksu.

In the high valleys of Raskam and Sariqol (Tagharma, Tash Kurghan, Vacha, and Mariong), wheat, barley, and peas are grown; at altitudes of above 10,000 feet (for example at Dafdar in the Tash Kurghan valley) only peas and poor Himalayan barley are grown; wheat does not flourish.

The average yield of the various grains in the principal oases of Kashgaria is roughly as in the following table:—

Oasis.	Maize.	Wheat.	Barley.	Rice.
Kashgar	30 Fold	11 Fold	12 Fold	15 Fold
Yangi Hisar	40 "	9 "	15 "	
Yarkand	40 "	15 "	16 "	18 Fold.
Karghalik	36 "	14 "	15 "	16 "
Khotan	30 "	13 "	14 "	14 "
Kerya	28 "	14 "	12 "	11 "
Aksu	35 "	15 "	16 "	15 "
Utch Turfan		14 "		
Khurla	30 Fold	12 "		8 Fold
Karashar	35 "	12 "		

This table shows that, with the exception of maize, which grows well everywhere, the yield of other sorts of grain is only moderate. The yield is affected also by the system of agriculture, the implements of husbandry, and the want of manure. The duration of the hot summer enables two crops to be obtained in the year. A second crop is planted only on the more fruitful areas, the less fruitful are sown only once. The implements of husbandry are very primitive—a wooden plough with an iron share is used, which breaks up the soil only to a trifling depth. Harrowing is effected with rough harrows and ordinary rakes.

For manure, ordinary dust and mud from the roads and streets, mud thrown out when the canals are being cleaned, material from old ruined buildings, and dung are used. But of dung, in consequence of the small number of cattle owned by the inhabitants, there is very little. The primitive loess, which would make an excellent mineral manure, is little used. Under these conditions the fertility of the soil is becoming perceptibly reduced and is far below the normal which would be obtained by suitable manuring.

In the Sariqol valleys the average yield of grain is considerably lower—wheat gives about 7 fold, barley about 7 fold, and peas from 7 to 8 fold.

There is no accurate information available as to the total yield of grain in Kashgaria, because crop records are neither made by the administration, nor by the people themselves. But as the land tax is nominally one-tenth of the total yield of the land, it is possible to form an approximate estimate of the total yield from the amount of the land tax. The following is the official Chinese record of the land tax for the year 1900, which had to be paid half in wheat and half in maize :—

Locality.	IN 1900 LAND TAX WAS		ASSUMED YIELD @ 10 TIMES TAX.		
	"Dans" = 250 lb avoirdupois.	Pounds avoirdupois.	Total lb.	Per head pounds.	Per acre bushels.
1	2	3	4	5	6
Kashgar . . .	17,223	4,307,000	43,070,000	135	} 2.0
Yangi Shar . .	18,140	4,535,000	45,350,000	200	
Yangi Hisar . .	10,822	2,705,500	27,055,000	220	} 2.7
Maralbashi . .	1,806	451,500	4,515,000	225	
Bai	9,706	2,426,500	25,265,00	..	} 3.5

Locality.	IN 1900 LAND TAX WAS		ASSUMED YIELD @ 10 TIME TAX.		
	" Dans " = 250 lb. avoirdupois.	Pounds av irdu- pois.	Total lb.	Per head pounds.	Per acre bushels.
1	2	3	4	5	6
Yarkand . .	18,235	4,571,250	45,712,500	222	1.1
Karghalik, Guma, Sanju, etc.	15,200	3,800,000	38,000,000	245	3.5
Khotan . .	25,189	6,297,250	62,972,500	350	3.5
Keriya . .	8,210	2,052,500	20,525,000	390	2.8
Karashar . .	6,254	1,563,500	15,635,000	184	4.7
Kuchar . .	13,900	3,475,000	34,750,000	535	1.6
Aksu . .	19,096	4,774,000	47,740,000	251	2.6
Utch Turfan . .	9,470	2,367,500	23,675,000	1,127	2.6
Whole country	..	..	434,265,000	267	3.0

From column 5 of the above table it is manifest that of wheat and maize (80% of the total land under crops) there is only 267 pounds per head of the population. If 25% is added to this, we get 331 pounds as the total grain per head per annum—less the amount consumed by animals. As this is quite insufficient for a people whose staple food is grain, and as none is imported, it is probable that the grain supply is greater than these figures would make out. It may, however, be assumed that there is no great surplus of grain available because (a) the country is poor, and (b) the people have no need to keep a large reserve against famine, as all the fields are irrigated and the crops therefore practically certain.

The production of food grains is said to be limited by the fact that the Chinese Government have forbidden the export of every sort of grain. That the country could produce much more is evident from column 6, from which it would appear that not more than a quarter of the land can be under grain, as land may be expected to give at least 12 bushels of wheat to the acre.*

Speaking of the cultivated area from Kashgar along the southern foot of the Thian Shan, Lt. Whitaker, Rifle Brigade, said:—"The country should be able to support a brigade on the march, but any larger body of troops would have to bring up supplies."

In 1900 the grain produced in Sariqol was only sufficient for the needs of the settled population. The nomads and semi-nomads get the bulk of their grain supplies from the oases.

* The average yield per acre is—in England 30 bushels, in Minnesota 18, in France 15½ and in the Punjab 13.—(*Enc. Brit.*)

A great deal of *lucerne* is grown, as the supply of straw is insufficient for feeding the horses.

Cotton.

Cotton is grown almost everywhere, but principally in the oases of Aksu, Kashgar, Yarkand, Khotan, and Keriya. That from the plantations of the Keriya oasis has the best staple. Some of this is used by the local weavers, and some is exported to Soviet Turkistan. In 1900, 378 tons were exported, having a value of about £17,000. This figure has been greatly exceeded of late years. In 1904 the value of the raw cotton exported to Soviet Turkistan was over £100,000. At present, trade with Soviet Turkistan is practically nil, although the Soviets are making strenuous efforts to revive it. Mr. Macartney estimated the total annual production of cotton at 16,000 tons. Cotton presses were established at Kashgar and Yarkand in 1923.

Hemp.

Hemp is cultivated in the Yangi Hisar, Yarkand, and Karghalik oases. From a powder which forms on the leaf of this plant when dried a drug called *charas* is produced which is used by the local population, and also finds a good sale in India, Afghanistan and (contraband) in Soviet Turkistan. No special ground is allotted by the cultivators to the hemp plant, which is invariably grown along the borders of irrigation canals or on the edges of fields, more or less as a protection for crops occupying the central space. It is extremely hardy and needs no care. Its fibres are employed in the making of ropes, and its seed furnishes an oil useful for lighting and cooking purposes.

Sesame and tobacco.

Sesame and *tobacco* are grown everywhere from the seed; of the sesame an oil is made, which is used for food and for lighting. The tobacco is not distinguished by any great excellence, and is all consumed locally.

Flax.

Flax is cultivated in small quantities, especially in the oases of southern Kashgaria.

Opium.

Opium is made from the poppy, but the regulations for the suppression of the growth of the poppy have been severely enforced, and there is probably no poppy cultivation at all in the Province at the present time.

Market gardening.

Vegetables.—Melons, pumpkins, cucumbers, cabbages, beans, haricot beans, beetroot, turnips, radishes, carrots, onions, fennel, parsley, tomatoes, peas, and spinach are successfully grown. Potatoes are grown only in the oases of Yarkand, Yangi Hisar, and Utch Turfan, whence they are sent to the neighbouring districts. Market-gardening is scientifically carried on by the Tungans and the Chinese colonists, who, besides the vegetables mentioned above, also cultivate various kinds which are peculiar to China, such as long thin cucumbers, cauliflower of various kinds, salads, knolkole, etc.

Fruit gardens.

Fruit gardens flourish in Kashgaria. In the suburbs of the towns are large gardens belonging to the wealthy men of the place; in the villages, almost every house is surrounded by a small garden; besides these, the water channels and the boundaries of the fields are often planted with fruit trees. Among the fruits the first place as regards quantity is taken by apricots, then grapes of various kinds, mulberries, another kind of mulberry suitable for silk-worms, peaches, nectarines, apples, pears, walnuts, wild cherries, white cherries, pomegranates, quinces and figs.

The best apples are produced in the Faizabad, Karghalik and Utch Turfan districts, pears in the Kuchar district, pomegranates at Khargalik whilst Kashgar is noted for its grapes, nectarines, and peaches. Yangi Hisar, Yarkand and the Yapchan districts are considered to produce the finest melons, Artush north of Kashgar has a reputation for figs, and Khotan for mulberries. The produce of the gardens is mostly consumed on the spot, and serves as an addition to the ordinary food of the people. Wine is made from the grapes; fresh and dried fruits used to be exported to Russia to the extent of about 120 tons annually.

Liquorice.

The liquorice root grows as a weed all over Kashgaria.

Silk.

The oases of southern Kashgaria, especially Khotan and Chira, were long celebrated for their silk. Mulberry trees are plentiful also in Karghalik, Yarkand, and Kashgar, but they are not used for sericulture.

The silk industry of Khotan has great possibilities. Before the revolution in Russia, and the consequent stoppage of all trade with that country, the annual production of cocoons in Khotan amounted to 1,200 tons. Since the Russian debacle the production has dwindled until it totals only some 480 tons wet (cocon-frais) which gives a yield of approximately 165 tons of dried cocoons (cocon sec); this quantity produces about 38 tons of spun silk. About two-thirds of the silk are exported to India in the autumn months, the remainder being disposed of locally. In 1925, the value of silk exported to India was 9½ lakhs of rupees; in 1924, it was 15 lakhs.

The silk spun is of three kinds, each somewhat coarse and irregular, not being spun all through, *i.e.*, not spun with a given number of threads. The mode of spinning and the implements are primitive, and consequently the finished article compares unfavourably with Kashmir silk. If the industry were exploited on up-to-date lines a far better quality could be obtained. The silk leaves the "bassins" faultless and in regular threads, but the cost is high owing to the extra work required with such inadequate implements.

Wool.

Wool is produced to a considerable amount by the flocks of sheep. It is partly manufactured into felts, carpets, etc., and partly exported in a raw state.

Camel's hair.

A small quantity of camel's hair is obtained, mostly near Kashgar. The Kirghiz manufacture the hair of their camels into ropes for their own use.

2. *Vegetation.*

In the river valleys of Kashgar, reeds, liquorice root, hemp, thistles, camel thorn (*Alhagi camelorum*), *sugak* (*Lycium*), and clematis grow in abundance. On the loess hillocks there is tamarisk; this is found in large groves, and attains a height of 20 feet, and a thickness of 5 inches at the root. In the oases, besides fruit trees, there grow *jida* or Babylonian willow (*Eleagnus* sp.), white acacia, willows and two sorts of poplar—the heterophyllous poplar (*populus diversifolia*) or *tugrak*, and the pyramidical poplar. All the roads between the towns and chief villages and the banks of irrigation canals are planted on both sides with willows and these two species of poplar; and the woods of the Kashgarian plains consist of poplar. The *tugrak* is indigenous only in Central Asia. It attains a height of from 70 to 80 feet and a breadth of from 14 to 16 feet; some specimens have even been found with a breadth of 28 feet. Its stem is covered with bark in which are long deep cracks. On some specimens are found large outflows of sap from which the natives make small utensils. The leathery leaves of the *tugrak*, which dry on the trees, are broken and carried away by the wind, and consequently in the Kashgarian woods we do not find the usual layer of decaying vegetation. Besides the numerous species of trees mentioned, the elm is found in the oases of Karashar, Khurla and Kashgar.

In the deep ravines of the rivers, near the foot of the mountains, the *tugrak* is seldom seen; here bushes predominate—wild roses, *oblepiki* and sweet willow—and there are large tracts of *chia*—varieties of feather grass (*Lasiagrostis* spl.). On the foothills grow wormwood, mountain shrubs, the mountain pine and *kharmyk* (*Nitraria shoberi*). *Saksaul* (*Haloxylon ammodendron*), which is so widely diffused in Central Asia, is seldom met with here, and is only found in a few places in the south-east of Kashgaria.

In the Kuen Lun mountains the rainfall diminishes considerably from the south-west to the north-east, and the flora of the mountain belt gradually becomes poorer in the same direction. The fir, juniper groves and thick bushes which abound on the hills of the Tiznaf basin, disappear to the north-east. Even in the hills to the south of Keriya the bushes are very thin and monotonous, although the alpine meadows are still good. To the east of the Keriya river, even the meadows become poorer, changing in the Altyn Tagh and Tokus Davan hills into occa-

sional clumps of stunted shrubs, wormwood, sweet willow and Tibetan speargrass. The large valleys and the northern slopes of the Thian Shan are covered with excellent grazing, interspersed, in most places, by pine forests. The Yulduz valleys, and those of the various tributaries of the Tekes river, are particularly rich in pine woods.

North of the Thian Shan the resources of the country are difficult to estimate.

In the districts of Barkul and Kucheng, the conditions are very much the same as in the eastern part of the Kashgar basin, and supplies of much the same nature are probably available. The country is, however, on the whole less thickly populated, and the quantity of supplies obtainable would be, on the average, less.

Round Urumchi the population and the area of cultivation is greater, owing to the more suitable conditions prevailing. Large quantities of wheat and other grains are grown. The Marass district is extremely fertile and has been called the granary of Jungaria.

From this point westward to the Zairam Nor and northward to Tarbagatai the cultivation is much less extensive and supplies scarcer. The soil is less fertile, and the climate more severe. A force moving into the country would have to carry most of its own supplies, though fodder could generally be collected, particularly from the south towards the spurs of the Iren mountains. In the neighbourhood of the town of Tarbagatai (Chuguchak) itself, supplies of grain and fodder for a brigade could probably be obtained. Fuel is particularly scarce, the inhabitants generally using dried dung.

The Ili valley is remarkably fertile, producing wheat, barley and maize in profusion. Vegetables are grown in large quantities and fodder is very plentiful. The whole of the Tekes and the neighbouring valleys and the lower slopes of the hills are covered with excellent grass, while fuel is plentiful. There would be no difficulty in subsisting a division or even a much larger force in the Ili valley.

3. *Live Stock.*

Of domestic animals, horses, donkeys, camels, cattle, sheep and goats are everywhere kept, while yaks are to be found in the mountain valleys of Sariqol and Raskam.

Horses, donkeys and camels are described under the heading of transport.

Cattle-breeding is carried on by the Kirghiz and Tajiks in the mountains and sub-mountain tract of southern Kashgaria, in the wooded tracts along the courses of the Khotan, Keriya and Charchan rivers and in the Maralbashi district, where there is an abundance of kamish reed. The great cattle breeders of the province are, however, the Kalmuk and other nomad tribes. Their chief centres are in the Karashar district, where there is excellent grazing in the Yulduz valley; in the valleys of the Tekes and its numerous tributaries; and throughout the steppe country east and south-east of Tarbagatai (Chuguchak). In the Kashgarian basin, except where mentioned above, few cattle are kept. The cattle are small and bred chiefly for milk, though in the oases of the plains they are used for agricultural purposes.

Sheep are of two kinds—a fat-tailed species which is met with everywhere, and a long-tailed, short-haired breed which is found chiefly in southern Kashgaria. The distribution of sheep and goats is very much the same as that of cattle but their numbers are very much greater. The average Kalmuk owns about 100 sheep while he probably has only one or two oxen. Some of the richer men own as many as 1,000 sheep and 25 to 30 head of cattle.

In 1900 the settled population of Sariqol and Yangi Hisar owned on an average:—

Per house.	In Sariqol.	In Yangi Hisar.
Cattle	4.3	2.5
Sheep and goats	71.9	11.2

From the numbers given for Yangi Hisar, may roughly be calculated the cattle owned in the remaining oases of Kashgaria, but in southern Kashgaria the people own roughly about twice as many sheep as are shown for Yangi Hisar. In the other mountain districts the people may be assumed to own about half the numbers given for Sariqol.

Domestic animals, to the value of about £12,000 annually, are imported from Soviet Turkistan, principally from Semerchensk.

Milk, cream, curds, fowls, and eggs are plentiful in all the oases.

In the hills, the animals are in very good condition in the summer, the grazing being good, but are very poor in the winter, when it is scanty.

4. *Fauna.*

The fauna of Sinkiang is not distinguished by the richness and variety of its species. In the Kashgarian hills there are various wild sheep, ibex, wolves, bears, lynxes, badgers and marmots; in the central Kuen Lun there are wild yaks and wild asses, while wild horses are found in the north from long. 90° eastwards. In the Thian Shan there are wapiti, roe-deer, ibex, *ovis karelini* and bears. In the foothill tracts are found gazelles, foxes, and hares; in the lakes which do not freeze up there are otters; in the woods and groves of the river valleys there are deer, wild boar, wild cats, wolves and tigers. In the Kum Tagh, in the sandy desert to the east of Lop Nor, in the hills of the Kuruk Tagh, and in the districts of the lower Tarim, the Charchan, and Keriya rivers there are wild camels.

The ornithological fauna of Kashgaria is considerably more varied than the mammalian, especially in the Lop Nor district. Here, according to the information of Prjevalski, which is not quite complete, are to be found 134 species of birds, of which 25 species are permanent, 10 appear only in the winter, about 60 remain to nest, and the remainder are only birds of passage. In the mountains the birds most frequently met with are lammergeyers, snow partridges, rock partridges, pigeons and other species of small birds. In the Thian Shan, ring-necked or Mongolian pheasants are found and in Kashgaria, the Ph. Shawi, not ringed variety.

There are very few varieties of fish in Kashgaria—in its lakes and rivers there are only five species, mostly of the carp family; these are exceptionally plentiful in the Bagrash Kul lake, where fishing affords a livelihood to a large proportion of the people of Karashar.

Of reptiles and amphibious animals there are lizards, water snakes, toads and frogs. Of the poisonous species there are tarantulas, scorpions and centipedes, which abound in the valleys of the larger rivers. In summer, in the woods and groves of these valleys, are myriads of ticks, gadflies, midges, flies, and mosquitoes which compel even the wild animals to go out into the desert, and which almost prevent movement along the roads which lie in the belt of woods.

5. *Transport.*

The following animals are used for transport purposes in Sinkiang : ponies, donkeys, camels, mules and yaks.

Ponies.

Ponies.—Of the various breeds of ponies the Mongolian is the best. Ponies of this breed, although not large, are up to very great weight and are very cheap. They possess most remarkable stamina and sure-footedness in the most difficult mountain country. They are very tractable and sound. Their carrying capacity is from $2\frac{1}{2}$ to 3 maunds and they can pick up a living anywhere. It would be difficult to find a better stamp of transport pony. Most of the Cossacks are mounted on this class of pony and they are used for mounting the Chinese cavalry. An almost unlimited number of these ponies is available in the Tekes and Ili valleys and in all the districts occupied by nomad Mongols and Kazaks.

This description applies also to the Kirghiz ponies which, however, are not quite so good on the whole. These can be obtained in large numbers in the Sariqol and Raskam valleys.

In the large towns imported Tibetan and Badakshan ponies are found.

In addition to the above mentioned breeds there are a great many ponies of a nondescript breed in the Kashgarian plains. These are on the whole poor animals, the best coming from the oasis of Kashgar itself.

Donkeys.

The donkeys of Kashgaria are good and common. The average price is about Rs. 12. They are bred in large numbers

near Khotan. Practically all the internal trade is carried on by donkey transport and the supply is almost inexhaustible.

Camels.

Camels are common and can be obtained in large numbers at Kashgar and to the west; they are also numerous towards Khotan. Most of the nomad tribes north of the Thian Shan keep numbers of camels, the flesh of which is often used for food. In the Kashgarian basin they are only employed for transport purposes in autumn and winter, and are turned out to graze in winter, chiefly in the Guma oasis.

Yaks.

Yaks are used by all the inhabitants in the higher parts of the mountains to the west and south of Kashgar. They are most plentiful in Sariqol and Raskam. They are accustomed to very high altitudes and die in the slightest heat. They can carry 4 maunds each and are very sure-footed.

Mules.

A few Chinese *mules* can be obtained in places, chiefly at Karashar and Urumchi. They are imported from internal China.

Carts.

Carts in Kashgaria are of four types—the four-wheeled wagon (very rare), the Russian *tarantass*, the two-wheeled *arba*, or country cart, and the Chinese *mapa*.

The four-wheeled wagon is uncommon and is used chiefly for the transport of straw, coal, wood, or other bulky stores. It is drawn by four or five horses and carries about $1\frac{1}{4}$ tons.

The two-wheeled *arba* is of a similar type to that used in Soviet Turkistan; its wheels are bound round with thick iron tyres, which are secured by high-headed nails; over the body of the cart is a zinc covering on a light wooden framework. It is usually drawn by three horses or mules, one in the shafts and the other two abreast of the first. The usual load is about 1,100 lbs. They are well built and strong, but not too heavy.

The *mapa* is a small two-wheeled *arba*, over the body of which is a covering of canvas or some light material. It is drawn by one horse, and does not carry more than 550 lbs. Owing to its shortness, narrow track, and small wheels, it is extremely uncomfortable, jolty, and unsteady. It is much more convenient without its covering. It is used chiefly for the carriage of passengers.

Probably nearly a thousand carts of various types are available at Kashgar and about the same number at Urumchi. In Kuldja some 300 could be obtained within a five-mile radius. At Santai, 2 marches from Kucheng, 600 bullock carts are said to be available. These are used for bringing coal from the neighbouring mines. There is no information of the exact numbers available, but there is undoubtedly a fair number of carts in all the larger towns.

During the second Forsyth Mission to Yarkand in 1873, the *changpa* method of using sheep as transport was tried with success, and it is probable that this system is the most economical for sportsmen. One man can look after 30 sheep, each carrying a load of 20 lbs., and a sheep can carry on without grass or water, where a pack pony cannot.

6. *Minerals, etc.*

Mines.

The mineral wealth of Sinkiang is undoubtedly great, but it has been little explored and little worked, owing to the absence of experts and the want of capital. Up to the present, there have been discovered, and are being worked, mines of gold, lead, iron, copper, coal, salt, alum, sal ammoniac, silver and various other useful metals.

A statement of mineral, etc., resources as they existed in April 1922 is given in Table "A" on page 178.

Gold.

Gold has been worked in Kashgaria, principally along the southern frontier, from the Kharangu Tagh on the west to the meridian of lake Lop Nor on the east (a distance of about 530 miles), at the foot of the Kuen Lun, and in the mountain valleys at a height of from 7,500 to 15,000 feet.

According to M. Bogdanovich, a Russian mining engineer, the gold mines are distributed in the following 12 groups :—

- (1) In the basin of the Khotan river, along the Yurung Kash and Kara Kash rivers.
- (2) Along the Kash river—the Chokar, Karatash, and Kap-salan mines.
- (3) The Kar Yagdi mines on the Kurab river, one day's march south of Polu.
- (4) The Surghak mines near the source of the Nia river.
- (5) Along the river Shemmalik Su.
- (6) Along the rivers Chijgan and Talkalik.
- (7) The Khan Bulak mines at the source of the Saryk Tuz river.
- (8) Mines at the sources of the Molja.
- (9) The Kopa mines.
- (10) The Khodallik Sai mines.
- (11) The Turgi Sai mines in the high snow-covered ranges of the Kuen Lun, about five marches from the last summer nomad camp in the valley of the Charchan river.
- (12) The Akka Tagh mines on the Tibetan highlands.

The extraction of the gold is effected by the most primitive methods. The yield may be roughly estimated at 7,000 oz. a year. Colonel Korniloff gives the yield as from 4 to 6 cwt. per ton of gravel, and states that nuggets of considerable size are found.

Besides the places mentioned above, gold is also obtained in the valley of the Yarkand river above Kosarab, in the ravine of the Dinar north of Kuchar, and in the Kuruk Tagh at a distance of two days' march from Chinilg on the Khurla—Dural road.

The Chinese authorities have always asserted a sort of monopoly over the gold mines of Khotan, Keriya, etc. The right of mining gold is allowed to anybody, subject to a tax of one-third of the gold found, and no tax is demanded from the prospector, the free sale and export of gold being permitted. The district magistrate of Keriya, however, has taken all the mines under his own supervision and prohibited, as far as he can, the sale of gold to anyone except himself.

Coal.

Coal has been found in the valley of the Yarkand river near Kosarab, in the valley of the Gez, and in the ravine of its tributary the Oi Tagh, at Kogren in the valley of the Makran Su, at Kansu (50 miles west of Kashgar, on the Kashgar—Osh road), and near the towns of Kuchar, Khurla, and Aksu.

It is also said to exist at Tash Malik (in Sariqol, two marches south-west of Kashgar,) and near Iggiz Yar, Karghalik and Ili. Of the mines mentioned, only those at Oi Tagh, Kogren, Kansu, Aksu and Kuchar are worked at present. The Kansu mines supply coal to the garrisons of Kashgar and Yangi Shar. Their annual output is about 3,200 tons. This coal has been analysed as follows—ash, 13% ; volatile matter, including water, 40% ; pure carbon, 47%.

About 12 miles from Kuldja, coal mines exist, from which the production is sufficient to supply with fuel practically all the inhabitants of the district of Ili.

Near Santai, also, two marches from Kucheng, coal is mined. This is converted to coke at the pit mouth and is produced in sufficient quantities to make necessary the employment of 600 bullock carts on the road between the mines and Santai.

The methods employed in working these mines are very primitive. With the advent of proper machinery and the establishment of the mines on a proper basis, there is no reason why this industry should not reach a state of great prosperity, particularly in the Ili valley, which is the centre of a large and thriving district.

Naphtha.

Naphtha is said to exist at Kuchar, Aksu and Karangalik (about $1\frac{1}{2}$ marches west of Kashgar).

Iron.

In the eighth and ninth centuries, Eastern Turkistan, according to Arab historians, provided the whole Mohammedan world with iron, and iron implements, and, if this is the case, the mines must then have been worked on a large scale. At present there is only one mine worked in Kashgaria, namely, that at Tounlik, about 7 miles south-west of Iggiz Yar. This mine is worked by the people of the Iggiz Yar, Toplik, Kuduk, Chumlung and

Kizil villages, in each of which are five or six smelting furnaces. It produces from 200 to 250 tons of metal per annum ; 3,200 tons of iron are imported annually from Siberia.

Iron is also said to be worked in the Ili valley not far from Kuldja, and at Urumchi.

Iron ore is reported to exist at Bazar Dara and numerous places in the Raskam valley.

Copper.

Copper is mined in many places—in the valley of the Khalastan river (near the sources of the Tiznaf, about 12 miles above Brangs), at Kogren and Kok Bulak in the valley of the Markan Su, at Sari Kamysh and Ulugchat in the valley of the Kizil Su, at Kalta Yailik (in the suburbs of Kashgar), at Bai, and in the valleys of the Kuchar river and its tributary, the Kungei Koksus. The working of the seams of copper ore is a Government monopoly ; the ore is smelted on the spot, and the metal sent to Kashgar and Aksu, where part of it is minted into money and part is offered for sale. The ore from the Kizil Su mines consists of copper, iron and sulphur (copper pyrites) in the following proportions—copper 30% ; iron 35% ; sulphur 35%. It is said that the copper of the country, and particularly that of Bai, contains gold, but the question has apparently never been solved by actual analysis.

There are several copper mines in the Ili district, but the details of the output are unknown.*

Lead.

Lead ore has been found in the following places—in the valley of the Kara Kash above Shahidulla, at Urta Kir to the south-east of Khotan, at Kurgashim Khana on the Kashgar—Osh road, in the Kara Teke hills near Kalpin, near Kuchar and at Khan Bulak in the Kuruk Tagh hills. At the present time only the Kuchar and Khan Bulak mines are worked. The Kurgashim Khana mines have long ceased working, although the ore there (galena) contains from 75 to 80% of lead.

Nickel has been found near Khotan.

* In 1913 a Russian was granted a concession to mine coal, silver and copper in some mountains near Ili.

Sulphur.

Sulphur is found in the Kugurt Tagh hills to the south of Kalpin, near the town of Kuchar, and at Gubolik, to the south of Polu. It is exported to Soviet Turkistan to a small extent.

Alum.

There are rich mines of alum north-east of Kuchar in the Zemshi Tagh, and it is also found in the Tash Kurghan valley near Baldir (in the ravine of the Jmak Ka Ver), and near Tumai in the Keriya district. Over 50 tons of alum were exported to Soviet Turkistan in the year 1900.

Sal ammoniac.

Sal ammoniac is found in the neighbourhood of Kuchar, and is exported to Russia to the amount of above 260 cwt. per annum.

Common salt.

Deposits of common salt exist near the towns of Maralbashi, Aksu, and Kuchar, at Sari Kamysh on the Osh—Kashgar road near Baldir in the Tash Kurghan valley, near Syed Deif in the Vacha valley, and at Kadrakin Mazar on the Tash Kurghan—Baldir road. The inhabitants of the Yangi Hisar, Yarkand, and Khotan oases get salt from salt pans.

Saltpetre.

Saltpetre is obtained from the ruins of ancient towns near Aksu and Karashar.

Precious stones.

The best and most extensive deposits of jade are to be found in the Kuen Lun. Here in the area from the Muztagh Ata to the meridian of Lop Nor jade-bearing seams crop up in seven districts—along the Yarkand river near Pil and Tunga, in the valley of the Tiznaf, along the Kara Kash near Shahidulla, in the Kharangu Tagh, in the Lushi Tagh, in the Tokus Davan at the source of the Kara Muren, and in the Altyn Tagh along the Tatlik Su. Alluvial deposits of this stone are found on almost every river of Kashgaria, and in many waterless deserts.

The jade is of inferior quality and at present the deposits are worked only on the Yurung Kash at Kumat, on the Kara Kash near Ujat, and on the Tiznaf near Karghalik. The seams of jade are little worked.

Small quantities of sapphires and emeralds are obtained in the Khotan districts.

Fuel.

In the Kashgarian basin and in the neighbourhood of the Thian Shan, wood is the chief fuel in use, but at Kucheng and its neighbourhood, and throughout the Ili valley the place of this is taken by coal or coke. In the mountain regions, where wood is scarce, dung and *boortza* are used and dried camel's dung is used by the nomads throughout the northern steppe country. In consequence of the large quantity of wood consumed and the lack of foresight in planting young trees, the country, particularly in the neighbourhood of the larger towns, is being gradually deforested.

Miscellaneous.

Ozokerit, or mineral wax, is obtained near Kuchar; asphalt, or bitumen, at Kizil Ui on the Kashgar—Osh road.

Marble, gypsum and emery abound in the Chol Tagh hills, near Kizil Synur.

7. Industries.

The manufactures of the province consist mostly of hand-made articles. The first place, both as regards the value of its productions and the number of hands which it employs, is taken by the manufacture of cotton goods—textile fabrics, sacks, saddle bags and various small articles such as belts, tapes, girths, etc. A statement showing the present state of Industries is given in Table "B" on page 180.

Cotton.

In Sinkiang three sorts of cotton fabrics are produced—*mata* or coarse cotton cloth, *chakmen* and *sargyaz*.

The cotton manufactures of Kashgaria are amply sufficient for the wants of the local population, and owing to their durability and cheapness they have a good sale in Soviet Turkistan, where

they seriously compete with the productions of Russian manufactories. According to the customs returns for 1900, 162 tons of cotton fabrics were exported to Soviet territory, in addition to about 24 tons of ready-made clothes (*khalats*), which are made up by local tailors in the larger towns. Sacks and saddle bags are also made, and exported to Russia in considerable quantities—in 1900 about 26 tons. The other cotton productions of Kashgaria are mostly used up in the country.

A large quantity of cotton fabric is manufactured also at Kucheng, Urumchi and Kuldja, but at the latter place the supply does not meet the demand and is greatly supplemented by imports from Russia.

Silk.

The manufacture of silk is carried on principally in Chira. Silk and semi-silk fabrics are made, and Khotan is also celebrated for the manufacture of silk carpets on a cotton foundation, which are noted for their colour, beauty of design, and durability; these, however, can only be obtained by special order. With the decline of sericulture the manufacture of silk has also declined.

Woollens.

From wool are made felts, carpets, and mats. The felt manufacture is carried on principally in the oases of Aksu, Yarkand, Karghalik, and Khotan. The Khotan felts, on account of their durability, softness, and beauty, are greatly valued throughout the whole of Central Asia. Woollen carpets and mats on a cotton foundation are made in the oases of Aksu, Yarkand, and Khotan and owing to their brightness, beauty of design and cheapness, have a good sale in Soviet territory, but their durability is inferior to that of Turkoman, Persian, and even Kirghiz carpets. The old Khotan carpets, now rare and difficult to obtain, are both beautiful in design and colour, and durable. The modern Khotan carpet is an aniline eyesore and has lost all the qualities that it used to possess.

Furriery.

The dressing of furs, chiefly sheepskins, is carried on in the oases of Khotan, Aksu, and Kashgar; the Khotan skins are considered the best. Considerable quantities of dressed skins are

exported into Soviet Turkistan where the best of them, after some cleaning, are sold as "Tibetan." A considerable trade is carried on in stone marten fox skins.

Leather.

The manufacture of leather is carried on in the oases of Yarkand, and Kashgar. They prepare the hides of oxen, horses, sheep and goats; 300,000 sheep and goat skins are said to be exported annually, mostly to Soviet territory. In the Yarkand oases, along with the manufacture of leather, is carried on the manufacture of footgear (shoes and slippers); joiner's glue is made from the clippings and useless pieces of skins. The native leather is not as good as Indian leather, and a considerable quantity of the latter is imported. Yarkand footgear is exported to almost every oasis in Kashgaria, and also to Soviet territory.

A tannery, on fairly modern lines, began work at Kuldja in 1909, with a capacity for curing 50,000 hides in a year. Of these 20,000 can be obtained from the Ili district, the remainder being imported from the adjoining Soviet territory. This factory receives contracts for cavalry saddles and boots for the Chinese troops in Ili. Recently, however, the affairs of the tannery have become somewhat involved. The European manager has been dismissed, the quality of the leather has greatly deteriorated, and, owing to the financial methods of the Tartar General of Ili, the ruin of the factory appears to be imminent.

Pottery.

The manufacture of pottery is confined almost exclusively to Kashgar and Yangi Hissar. Earthenware utensils—cups, pots, jugs, plates, and water-vessels—are produced and exported to the neighbouring districts.

In southern Kashgaria wooden utensils are principally in use.

Ironware.

Iron vessels, agricultural implements, nails, horse-shoes, and various small articles for household use are made, mostly of iron imported from Soviet Russia. Only the five villages of the Yangi Hisar district, where the Tounlik iron ore is smelted,

use local iron. In these villages ploughshares are made, which, owing to their cheapness, have a good sale in the neighbouring villages and in southern Kashgaria.

Copperware.

Copper vessels are made from local material in the principal towns of the country, and are to a small extent exported into Russian territory.

Paper-making.

In Khotan and Yarkand writing paper is made from the bark of mulberry branches, and in the trade is known as Khotan paper. Owing to its coarseness and inferior quality it has no sale outside the country.

Flour-milling.

Milling is carried on in all the oases of Kashgaria. The native water-mills are built on the larger channels, usually near their head, and have 1, 2, or occasionally 3 wheels. The daily outturn of each wheel is on the average about 800 lbs. of flour.

Fishing and hunting.

Fishing and hunting are the principal occupations of the population on the shores of lakes Bagrash Kul, Lop Nor, and Kara Kul, and on the lower courses of the Tarim and Konche rivers. The inhabitants of the latter district make artificial lakes, inundating the hollows along the river banks by channels led from the river. Each lake has its special owners who alone are allowed to fish in it. The fish are caught by drag-nets and bag-nets, and sometimes by hooks and spears.

The Kalmuks in the Yulduz valleys hunt bears, ibex, wolves, *tarbagan*, and the Yulduz fox, the skin of which is specially valued by the Chinese on account of its long soft fur. The Chinese also value deer horns highly, especially when in velvet, as they are supposed to have medicinal properties. On the northern steppes *tarbagan* hunting is quite an important industry. The *tarbagan* is a marmot and his skin is of some commercial value.

Among the nomad and semi-settled inhabitants of the country, manufactures are in a backward condition. Mention may be made however, of their hand-made felts, horse-clothes and ropes, which are chiefly used locally, only a small quantity being sold to the settled population, and in the neighbouring countries of India, Afghanistan, and Soviet Turkistan.

TABLE "A".

Resources, April 1922.

Article.	Place of Origin.	Remarks.
Gold	Altai Mountains.	Production is a monopoly of the District Magistrates of the places in question. Deposits near Surghak are reputed to be rich.
Gold	Khotan, Keriya, Charchan, Surghak (near Keriya).	
Silver	Keriya.	
Copper	Kuchar, Turfan, Aksu	Extensive deposits.
Iron	Ili, Kizil near Yarkand, Yangi Hisar	Do.
Coal	Ili, Urumchi, Aksu, Yangi Hisar, Kuchar.	Extensive coal fields at each place.
Oil	In the foothills of the Thian Shan north of Kuchar.	Not yet surveyed.
Ozokerit or mineral wax	Kuchar, Yarkand	Said to be large deposits near Kuchar of excellent quality. Samples and full report sent to the Geological Survey of India.
Sulphur	Goma	Small mines only partially opened up.
Alum	Kuchar	Sells in Kuchar at 6 tengas (Re. 1) per 17 lb.

TABLE "A"—*contd.*
Resources, April 1922—contd.

Article.	Place of Origin.	Remarks.
Sal Ammoniac	Kuchar.	Also found elsewhere, but best is from Aksu.
Salt	Aksu	
Saltpetre	Aksu.	Extensive jade mines in the Khotan district but they are not now exploited, mainly owing to their present inaccessible nature and the intense cold prevailing during the greater part of the year. In the Karanghan Dag, Khotan District, there is evidence of rich jade deposits, but little can be ascertained owing to the people declining to help in any way from fear of forced labour.
Jade	Khotan	
Marble	4 marches south of Turfan	Quality not known.
Gypsum	Sampola.	Said to be of poor quality.
Emery	Chira (Shaghar Dag)	

TABLE "B".

Industries.

Article.	Place.	Production.	Remarks.
Cotton wool . . .	Kashgar, Kuchar . .	Quantity could be made practically unlimited.	About 530 maunds were exported to India in 1921.
Silk	Khotan, Yarkand, Goma, Karghalik.	....	Large export to India; 1176 maunds in 1925.
Charas (Hemp Drug)	Yarkand, Kashgar, Karghalik.	....	Large export to India (1925, 1000 maunds) and in 1921, 400 maunds were sent to III from Kashgar.
Tobacco	Khotan, Yarkand . .	Poor quality.	
Cotton	Kashgar, Faizabad.	....
Rice	Kashgar, Yarkand, Aksu.	Unlimited. Good quality.	
Slippers	Kashgar and Yarkand.	....	Manufacture of slippers is general throughout the province.
Leather	Kashgar, Yarkand, Aksu, Kuchar.	Unlimited	Methods of curing are primitive, but with modern machinery this industry would be a paying one.

TABLE "B"—contd.

Industries—contd.

Article.	Place.	Production.	Remarks.
Copper ware . . .	Kashgar, Khotan, Aksu, Kuchar.	....	....
Iron manufacture . .	Kashgar . . .	....	Primitive appliances and poor result although iron itself is of good quality.
Oil	Kashgar, Aksu, Kuchar.	No accurate data . .	About 24,000 lbs. weight pro- duced in Kashgar district annually.
Pottery	Kashgar . . .	Poor quality. . . .	Special pottery bazaar in Kash- gar.
Paper	Khotan . . .	....	Coarse quality but strong. Re- sembles rough brown paper : unsuitable for writing.
Fruit	Kuchar (pears), Kar- ghalik (apples), and throughout Kashgaria general- ly.	Generally good . . .	See page 160.

9. *Trade.*

The internal trade of the province is small, being confined chiefly to the exchange between towns and oases of their own produce. As most of these are similar, the only articles which are exchanged are those mentioned above as being produced in special localities. The internal trade, therefore, is chiefly confined within the limits of each separate oasis, the larger villages of which generally have a bazar once a week.

The external trade of the province was completely changed by the Russian Revolution of 1917. Up to the time of the Russian Revolution, the great bulk of the external trade was with Russia. This was due to the superiority of the trade routes with that country and to the care with which Russia fostered her trade.

Russian trade with Kashgaria alone increased from a value of £163,000 in 1882, when the consulate was first established, to £589,000 in 1905, but it suffered a temporary decline to £457,000 in 1909. In 1913, imports from Osh to Kashgar *viâ* Irkishtam, had a value of 4,000,000 roubles, whilst exports from Kashgar to Osh were valued at 3,204,847 roubles.

The trade with Russia in the northern part of the province, through Kuldja and Tarbagatai (Chuguchak), was probably in excess of this figure, but no details are available. The chief articles of import from Russia were various cloth goods such as calicos, linens, chintzes, etc. The chief exports were cotton fabrics and brick tea, and, in the north, *tarbagan* and a few sable skins. The principal centres were Kashgar, Kuldja and Tarbagatai (Chuguchak).

With Inner China, southern Chinese Turkestan had practically no direct commercial intercourse. Since 1913 the road from Sinkiang to the interior, *viâ* Mongolia or Kansu, had been unsafe. Officials, when they came out on nomination to a post in Kashgaria, no longer made the journey by cart through Chinese territory, but travelled *viâ* Russia by the less expensive and more expeditious Trans-Siberian and Central Asian Railways. Trade was similarly diverted from its time-honoured routes through the Gobi Desert. With the change of fashion brought about by the Chinese Revolution, a mass of articles of dress and of food, essentially Chinese in character, ceased to be in demand. The little trade there was with Inner China was then almost entirely in the hands of one or two Kashgarian

merchants, and these usually sent their goods (vases, cups, silks, etc.), from Shanghai and Hankow by sea to Batum, and thence by the Central Asian Railway to Andijan. All the Chinese firms disappeared from Kashgar, with the exception of a Tientsin shop in the new City, and the only Chinese article in demand was brick tea.

British Indian trade, owing to the difficulty of the routes and cost of transport, was quite unable to compete with the Russian trade. In 1908 imports amounted to 44 lakhs of rupees, but in 1909, this value decreased by nearly two-thirds.

The greater part of the British trade comes through Ladakh and, in Kashgaria, the centres of this trade are Yarkand and Kashgar. The route principally used is from Leh *via* the Karakoram pass. This route is 30 marches over very difficult passes to Kashgar, while Osh is only 16 and the routes from it are comparatively easy.

The chief imports from Ladakh into Kashgaria are cotton, piece goods, manufactured silks, tea, dyeing materials, drugs, leather, hides, skins and coral.

The chief exports are ponies, *charas*, *namdas* and carpets, raw silks and raw wool.

But the Russian Revolution put a stop to trade between Russian Turkistan and Sinkiang and gave an artificial stimulus to the trade with China Proper and with India.

The effect on Indian trade will be seen from the following figures:—

	Imports.	Exports.
	Rs.	Rs.
1913-14 . . .	16,14,949	13,35,524
1922-23 . . .	22,19,756	22,72,276
1923-24 . . .	25,43,565	24,70,102
1925 . . .	16,24,569	23,56,582

At the present time, the Soviet are making strenuous endeavours to revive their trade and the effect is already beginning to be seen. Trade with India will no doubt decrease further in the next few years.

The trade between Kashgaria and Badakshan is small and fluctuating. From Kashgaria are exported cotton, goods, *khalats*, felts, ready-made shoes and *charas*. Imports consist of pistachios, almonds, horses and a few precious stones.

CHAPTER V.

MILITARY.

1. *General.*

The military forces in Sinkiang, who number perhaps 7,500 of all kinds, are untrained according to European standards. They are unprovided with transport, supply, medical or other administrative services and the troops beyond a few rough movements in the handling of arms do not undergo any drill or tactical training. They are fit to cope with potential internal disorder, but not to meet outside aggression.

They are divided into two classes:—

Lu-chün, or regular troops,

Hsun-fang Tui, or Kuo Min Chun (provincial troops), who are a sort of militia.

The Revolution of 1912 caused considerable alterations in the strength, distribution and composition of these troops. The nominal organisations are given below: they are only paper organisations and do not at present correspond to the actual state of affairs.

2. *Regular Forces.*

STRENGTH AND DISTRIBUTION.

The nominal strength of the regular forces is 7,724, but the actual strength is far below this.

The province is divided into five military districts, as follows:—

Centre District (Chung Lu).

Headquarters, Urumchi—

Infantry . . .	1 regiment (3 battalions).
Cavalry . . .	1 regiment (3 squadrons).
Artillery . . .	1 regiment (3 batteries— 2 mountain, 1 field).
Engineers . . .	1 company.

Right District (Yu Lu).

Headquarters, Suiting (Ilifu)—

Infantry . . .	1 regiment (3 battalions).
Cavalry . . .	1 regiment (3 squadrons).
Artillery . . .	1 regiment (3 batteries— 1 mountain, 2 field).
Engineers . . .	1 battalion (4 companies).
Transport . . .	2 companies.

*Rear District (Hou Lu).*Headquarters, Barkul—*Nil.**Left District (Tso Lu).*

Headquarters, Aksu—?

Front District (Chien Lu).

Headquarters, Kashgar—?

The Chinese forces on the Pamirs have recently been strengthened and are distributed in posts along the frontier, with the object of preventing the ingress of undesirables, but their strength is not known.

ESTABLISHMENTS.

The establishments of the various units are as follows:—

Infantry battalion . . .	659 all ranks.
Cavalry squadron . . .	363 „
Artillery regiment (field) . . .	568 „
„ „ (mountain) . . .	592 „

PERSONNEL.

The Lu chün was formerly composed entirely, or nearly so, of Chinese, but now many of these have left the colours and the numbers have been filled up with men of the local tribes and races, who are very indifferent soldiers and with little idea of discipline. There is said to be a very high percentage of Tungans in the ranks, which is not likely to increase the loyalty of the troops.

ARMAMENT.

Infantry.—7.9 mm. Mauser rifles and carbines, 1888 model, some Japanese, Hupeh and Mannlicher rifles, and some Austrian, Chinese, and Russian 1917 and 1918 military rifles. The Russian rifles can be bought in Kuldja and are actually bought by the Kalmuks and Kazaks.

The German military carbine, firing a lead bullet about .400 bore, is the most common rifle in use. A bandolier carrying 50 rounds of ammunition is the most common form of equipment for a soldier to wear.

The troops generally keep their rifles in a filthy state: they often cannot open the breeches on account of rust.

Many Kirghiz troops are still armed with flint locks and muzzle loaders of many different kinds.

In the Ili district there are said to be 1,000 magazine (9 rds.) Mausers.

Cavalry.—7.9 Mauser and Mannlicher carbines.

Artillery.—75 mm. Krupp field and mountain guns.

Engineers.—7.9 mm. Mauser rifles, 1888 model.

AMMUNITION.

There is probably very little ammunition available in the province and this has to be brought by road from China. A little is made by hand at Urumchi and in Ili.

COMMAND.

The troops in the province used to be under the nominal command of the Tartar General at Ili, but, as he was ignorant of military matters, they were left entirely to the Brigadier-Generals (Hsiehtung) at Urumchi and Ili.

Owing to the constant wars between north and south, and the defection of several provinces from the Central Government, the Chinese army has lost its national character and has become a collection of units working within its own provincial limits, and owing allegiance only to its provincial chief. This applies especially to Sinkiang, the forces of which are raised and controlled by the Governor, are paid from the provincial revenues and are not considered as coming under the authority

of the Ministry of War. Theoretically the latter controls the Chinese army and organization as a whole, but this will not work out in practice until order is restored throughout China and all the provinces are brought under one authority. In the meantime, the forces in Sinkiang are under the absolute control of the Governor of the Province.

DRESS.

The men wear uniform consisting of dark blue cloth, double-breasted coat, lined with cotton wool, fastened at the right side with loops, and trousers of a similar material tucked into Chinese boots.

TRAINING.

The standard of training is very low. Formerly there were three Japanese instructors at Ili: these afterwards moved to Urumchi but, owing to local hostility, were removed. They probably were able to accomplish little good.

The men, although they are on the whole somewhat better than the Hsun-fang Tui (Militia), are poorly trained and would be quite unable to offer any resistance to regular troops of a modern army, nor would they be any match for irregulars such as the Russian Cossacks.

DISCIPLINE.

Discipline is very lax and desertions are frequent.

ANIMALS.

Cavalry are mounted on strong and hardy Mongolian ponies with an average height of 13.2 to 13.3.

FINANCE.

The Ili Tartar General was allowed £75,000 a year for expenses in the upkeep of the Lu-chün force in the province, as well as for the two military schools. Now the Central Government allows no military funds to Sinkiang whose troops are paid from provincial revenues under the arrangements of the Governor.

PAY.

The men, cavalry and infantry, receive 4.20 taels a month in depreciated currency notes and are hardly able to subsist on their pay.

EDUCATION.

There used to be a third grade military school (Lu-chün Hsiao-tang) at Urumchi situated outside the southern suburb opposite the cavalry barrack. It had accommodation for 210 students but the number present seldom exceeded 140. The director was from Peking and there were two masters who taught English. There were good drill and gymnastic grounds. Pupils entered in September and after a three years' course were drafted into the middle grade military school at Sianfu (Shensi). The rifles used at this school were Mausers 1871, modified in 1878 and again in 1888.

There was also a third grade military school at Ili which was formerly under the supervision of a Japanese instructor. Here there were 300 students undergoing a three years' course. There was a Chinese gymnastic instructor, trained in Japan.

It is not known whether these two schools still function.

In addition to the above military schools there is a police school at Urumchi which is new and run on modern lines, and in which the training is said to be partially military.

ARSENALS.

There was said to be a small arsenal for rifles and equipment at Pokkalik, 18 miles south of Kashgar, but this was probably equivalent to a mistri's shop only.

Reserves of ammunition, etc., are probably stored at Ili and Urumchi. There is a small repairing shop at Urumchi.

3. *Militia.*

STRENGTH AND DISTRIBUTION.

The strength of the Militia in the province in 1914 was estimated at about 5,000 infantry and 2,700 cavalry, divided up into 29 infantry and 29 cavalry yings. Previous to the

revolution a scheme was on foot to increase this total to a strength of 14,639, but probably no steps have been taken in the matter.

The Hsun-fang Tui are nominally distributed as follows:—

Centre District (Chung Lu).

Headquarters, Urumchi—

Infantry	. . . . .	9 ying.
Cavalry	. . . . .	6 „

Right District (Yu Lu).

Headquarters, Suiting (Ilifu)—

Infantry	. . . . .	5 ying.
Cavalry	. . . . .	5 „

Rear District (Hou Lu).

Headquarters—Barkul—

Infantry	. . . . .	4 ying.
Cavalry	. . . . .	4 „

Left District (Tso Lu).

Headquarters—Aksu—

Infantry	. . . . .	4 ying.*
Cavalry	. . . . .	7 „ *

* Non-existent October 1926.

Front District (Chien Lu).

Headquarters—Kashgar—

Infantry	. . . . .	7 ying.
Cavalry	. . . . .	7 „

Up to April 1924 Ma Titai (*see* page 29) had reduced garrisons everywhere in order to put the pay of the non-existent troops into his pocket. The number of his troops totalled a few hundreds instead of the 4—5,000 he was supposed to have. Since Ma Titai's eclipse by the Governor of Sinkiang there has been a large increase in the number and calibre in the Kashgar district including some so-called *Lu Chun*. In May 1924, there were nearly 4,000 troops in the Kashgar area, all well armed

and equipped according to Chinese standards, and commanded by a better class of officer: but some had only three months training.

The following distributions are known (1926):—

Kashgar	1 regiment cavalry.
	3 battalions infantry.
	3 machine guns.
	4 trench mortars.
Yangi Hissar	4 companies infantry.
Faizabad	2 squadrons cavalry (good).
	1 battalion infantry.
Yarkand	4 companies infantry (very bad).
Irkeshtam and Frontier Posts	3 battalions infantry.

ESTABLISHMENTS.

The proper establishment of a ying is—infantry 301 men, cavalry 181 men and 135 horses, but the actual strength is very much less, and a normal ying would be 200 infantry or 100 cavalry.

ARMAMENT.

These are armed with muzzle-loading rifles of an old pattern: there are, in Kashgar, a few 1871 Mausers in store which are issued to the troops on rare occasions.

DRESS.

These troops do not appear to wear any regular uniform. They wear Chinese dress.

TRAINING.

The standard of training is very low.

4. *Fortified Posts.*

There are no fortresses, in the modern sense of the word, in Kashgaria. There are, however, numerous fortified posts, whose defences are of a primitive description, usually con-

structed with an absolute disregard for all tactical requirements. The main walls are of great solidity and would be difficult to breach with field artillery, without a very large expenditure of ammunition. The small walls for the protection of the firing lines could, however, be easily swept away, and the defence of the main walls could be made quite impossible by the employment of enfilade fire. There is usually cover for an attack right up to the walls, on one or more faces, owing to the way in which the glacis is cultivated or built over. The inhabitants of the forts are usually so crowded together, that a few shells dropped into the fort would produce great loss, and this would probably cause a surrender without further fighting. The chief object of these fortifications was to provide a refuge for the Chinese in case of a local rising, and to overawe the natives, and for this they are quite sufficient.

KASHGAR YANGI SHAR.

The strongest and most important of these fortified places is the Kashgar Yangi Shar. It is situated about 6 miles to the south-east of Kashgar, and 3 miles to the south of the Kizil Su. The surrounding locality is covered with villages, farmsteads, gardens and fields. The soil is a sandy loess. In shape Yangi Shar is roughly a square, with sides about 1,200 yards, long. The northern and eastern faces are straight, with a blunted angle at the north-east corner. The southern and western faces are rounded, especially the southern. There are three gates, one each in the centre of the northern, eastern and southern faces. The gates are protected by projecting bastions, which on the northern and eastern faces are square, and on the southern is semi-circular with a diameter of about 50 yards. The external gates in the bastions are not opposite the gates in the main walls, but at the sides. Besides protecting the gates, these bastions flank with rifle-fire the main walls of the town. With this object, there are also placed along the main walls square projections or bastions, about 250 yards apart, and projecting about 20 feet from the main wall. At the ends of the northern face there are bastions which are prepared for artillery defence, but most of the other bastions are only for infantry fire.

In profile the defences consist of an earthen rampart, which is about 28 feet high, and about 21 feet thick at the top. The exterior slope of the rampart is about $\frac{1}{6}$, and the internal slope

about $\frac{1}{10}$. On the external edge of the rampart is a mud wall about 7 feet high and $2\frac{1}{2}$ feet thick. Thus the height of the whole is about 35 feet. In the wall there are notches and loopholes for rifle-fire. The notches are about 1 foot broad and $2\frac{1}{2}$ feet deep, their lower edge is about $4\frac{1}{2}$ feet above the ground, and they have a very slight splay outwards. The loopholes are small square openings in the wall between the notches, about 30 to 40 inches apart, and at the same height as the bottom of the notches. Square embrasures for gun-fire have been made in some of the bastions, and are faced with burnt brick or wood. Along the inner edge of the rampart there is a mud wall about 4 feet high. On the upper surface of the corner bastions, and some of the others, and over the gates, small machicoulis galleries have been made for the defence of the ground in front, and for the protection of the sentries. Communication between the interior of the fort and the top of the rampart is effected by means of ramps, placed near the gates and at the corners, and also by means of stairs in the towers at the gates. In front of the rampart, along the edge of the escarp, there is another wall of the same height and size as that on the front of the rampart. Between this wall and the rampart there is thus formed a covered way which is about 12 yards broad. The ditch is from 30 to 35 feet broad, and not more than 14 feet deep. For communication with the outside there are passages left in the external wall, and wooden bridges are built across the ditch. The ditch is dry, but it could easily be flooded from the neighbouring water-channels.

The main street of the fort runs from the north to the south gate, and along it are the shops of the Chinese merchants, and workshops of all kinds. In the north-east corner are situated the magazines of arms and ammunition, the former yamen of the Titai, or commander-in-chief, and the barracks of his bodyguard and of the artillery. In the south-east corner is the yamen of the Chih Fu of the district, and not far from this are the store-houses for provisions. In the western half of the fort are the barracks of the infantry. In the absence of a citadel these might serve as internal points of defence.

Water is obtained from a channel which is led through the western face on an embankment, and is considerably raised above the surrounding ground, and which crosses the ditch by means of an aqueduct. These erections could easily be destroyed, but there are some extensive reservoirs in the fort, and

besides, owing to the height of the water-level in the ground, water could easily be obtained by digging wells.

Along the northern face of the Yangi Shar, at a distance of from 10 to 15 paces from the edge of the counterscarp, is the extensive Yangi bazar; along the eastern face there are, first, a few scattered farmsteads, then the Nachuk bazar opposite the gate of the same name, and further to the south, brickfields and a number of deep holes; opposite the southern face there extends a marshy meadow about 600 yards broad, and beyond it are the farms of the Kachirchi village. The roads leading from the southern gate to the village run along embankments. The ground opposite the western face is open for a distance of about 1,200 yards, and here is situated the drill ground: fairly close to the north-west corner there are a few farmsteads.

There are no advanced works, and the barracks of the troops quartered in the neighbourhood are not suited for this purpose. Three barracks (two cavalry and one infantry) are situated opposite the north-west corner of the fort, at a distance of from 300 to 600 yards from it, and two (cavalry and infantry) are situated about 300 yards from the eastern face.

KASHGAR OLD TOWN.

The defences of Kashgar consist of a rampart and ditch. The profile of the former resembles that of Yangi Shar, except that there is no wall along the escarp, and the ditch is so much filled up, that in places it is merely a slight depression in which vegetables are grown. The eastern and southern gates are protected by square bastions; the northern gate has no external protection. The fortifications of Kashgar are fairly well preserved. Thanks to the height and solidity of the rampart they would present a fairly serious obstacle to an attack, but the Chinese do not trouble themselves about repairs.

KUNYA GULBAKH.

Attached to the western end of Kashgar town is the Kunya Gulbakh fort. In plan this fort is an almost complete circle, and is joined along the chord to the wall of the native town. The section of the fortifications is exactly similar to that of the Yangi Shar fortifications. In the parapet wall of the rampart of the bastions, there are three embrasures for gun-fire in each of the external bastions, and four in the bastions which are at

the points where the wall of the fort joins the wall of the town; one of these embrasures is intended for fire along the rampart of the town wall, and another is for firing on the town itself. There are two gates in the fort; one for communication with the town and the other for external communication. The latter is protected by a semi-circular bastion.

Water is obtained in the fort by means of a channel led through the western face. By means of this channel the ditch could be filled, but the latter could be easily run dry, if the embankment which forms its north-eastern end were cut, as the ground here slopes considerably towards the north-east.

The northern and western faces of the fort have no glacis as, on this side, the gardens, brick works, Chinese cemetery, ruins of old fortifications, etc., come close up to the walls. Only on the southern face is there a small glacis, now mostly built over not more than 600 yards wide, but across this, at a distance of about 150 yards from the escarp, there runs a water-channel on a high embankment. Between the channel and the walls there is a pond which is about 6 feet deep. Within the fort are barracks for the garrison, and the yamen of the commander; all these buildings are surrounded by a mud wall about 14 feet high.

The other fortified places of Kashgaria have some slight peculiarities as regards their plan, but as regards their profile they differ little from that of the Kashgar Yangi Shar; they will consequently be described shortly.

MARALBASHI.

The fort of Maralbashi is a square of about 400 yards side. There are circular bastions at each corner, and semi-circular ones at each of the four gates, which are in the centre of the four sides. There are circular towers on the corner bastions, giving a second line of musketry fire. The walls are 15 to 18 feet high and revetted with brick. In 1903 the bricks had fallen away to a height of 6 feet, and the corner towers were cracked and rotten.

UTCH TURFAN.

The fort is a square, with sides from 300 to 400 yards long. In the centre of each face and at the corners are bastions for flanking the ditch; the latter is from 20 feet to 30 feet wide and

about 7 feet deep. On the northern side there extends a marshy depression; on the east the native town adjoins the fort. On the western side a high rocky ridge, from 500 to 600 feet high, forms part of the defences, and extends in a bow round the southern face, its eastern end being on the Aksu road. In its central part the ridge is not more than 450 yards from the walls of the fort; on the highest point of the eastern end of the ridge, at a distance of about 700 yards from the fort, is built a stone citadel, or, more accurately, a watch tower.

AKSU.

The fort is square, on a line bearing 55° ; the sides are about 1,000 yards long; at the corners, and in the centres of the sides, are bastions for flanking fire; the walls are about 20 feet thick and from 15 feet to 18 feet high. The musketry parapet on top is about 6 feet high and 3 feet thick. The similar parapet along the edge of the escarp has disappeared along the north-east side and at the north corner, where the Turki bazar comes right up to the walls. The ditch, where it exists, is 30 to 40 feet wide, and shallow.

KUCHAR.

Kuchar can hardly be considered a fortified place. It is surrounded by a mud wall of the usual pattern, which was once 15 feet to 18 feet high and about 10 feet thick at the top. This was in a crumbling condition in 1903; but in 1921 under the orders of the Governor, the antiquated fortifications of this place and Urumchi were being restored, and additional stories have been erected over the city gate.

KHURLA.

Khurla fort is about 350 yards square. Its walls are 15 feet to 18 feet high, and of the usual pattern.]

DURAL.

Dural fort is about 900 yards square. It has the usual flank defences. The walls are about 30 feet high. The ditch is about 14 feet wide and 14 feet deep. On two sides the fort adjoins the Turki town.

KARASHAR.

Karashar fort is an oblong, measuring about 450 yards by 350, with flanking bastions at the corners. The walls were originally about 12 feet high, with an additional mud parapet some 6 feet high on the front edge, but in 1903 they were in a semi-ruinous condition, and were being repaired to some extent. The small outer wall and ditch which existed in 1886 had disappeared in 1903. To the south of the town is an "inpan" measuring about 175 yards by 325. To the south-west is the native town.

YANGI HISAR.

The fort of Yangi Hisar is situated on a plain, and closely adjoins the native town, which is on the south-east of the fort.

It is square, with sides about 500 yards long, and has the usual flanking bastions at the corners. There are three gates with protecting bastions; those on the north-east and south-west are square, and the south-east gate has a semi-circular bastions. There are also some smaller bastions at intervals along the sides. The profile of the fortification is similar to that of Kashgar Yangi Shar, but on a slightly smaller scale. On the south-east the fort has absolutely no glacis; on the south-west the ground is open for a distance of about 300 yards; beyond this there are the gardens and farm steads of Kosh Arik. On the north-west the ground is open for a distance of about 1,200 yards; on the north-east, at a distance of about 150 yards, is the *nala* of Suluk Yar, which is about 120 yards broad, with perpendicular banks about 20 feet high; about 50 yards beyond this are the gardens of the Chakar village; close to the eastern corner is the Chilyan village; and just south of the eastern corner, almost touching the edge of the counterscarp, is the cavalry barrack. There is a good position for hostile artillery opposite the western corner, at a distance of about 1,200 yards.

YARKAND.

The Yarkand fort is situated to the west of the native town, at a distance from it of about 350 yards. In plan it is an oblong with sides of about 600 and 700 yards, with the usual bastions at the corners and with gates on the east and west sides. The profile is similar to that of Yangi Hissar, but slightly smaller. Two rows of shops, with ruins of mosques and other buildings, extend along the sides of the road which connects

the fort and the native town. Outside the western face of the fort there is an extensive bazar. Only on the north and south faces is there some open ground. Within the fort are quartered a cavalry and an infantry detachment, and all the Chinese of Yarkand, with a few natives, also live in the fort.

KHOTAN.

The Khotan fort is square, with faces about 450 yards long, and with bastions at the corners and along the sides. It has gates on all four sides. Within the fort are the barracks of a cavalry and an infantry garrison.

Inpans.

The Chinese troops, whether in town, fort, or country, are always quartered in defensible barracks, called *inpans*. Although these barracks differ in size, according to the strength of the detachments occupying them, the general type of all is similar, namely, a small fort, surrounded by a mud wall, having flanking towers at the corners and a wet ditch. The walls are usually about 14 feet thick and the same in height; they have a slight slope on both sides; there is a parapet on the top with notches and loopholes. The ditch has a depth of about 14 feet, and water is let into it by small canals. There is only one gate into this fort. Inside the *inpan*, immediately opposite the gate, at the wall opposite, is the abode of the commander of the *lianza* and those belonging to him; on the right and left walls are the barracks—cold, damp, and unhealthy. Soldiers' families are housed with the *lianzas*, but in a separate building. In some of the *inpans* there are, on the corner towers, open sheds for the sentries, in others these erections are over the gate.

In addition to the above mentioned forts, the following towns possess fortifications of sorts:—Toksun, Turfan, Hami, Barkul, Kucheng, Urumchi, Manass, Schiko, Chinho, Suidun or Ilifu, Hsincheng (4 miles south-east of Ilifu), Kuldja, Tarbagatai (Chuguchak), Karghalik, Opal, Tashkurghan (sketch in pocket at end of book). The fortifications of all, these are ancient and are quite useless against modern armament, although some of them would be difficult to take without the assistance of artillery.

The Russians have also constructed a small fort at Tash Kurghan, a sketch and plan of which are in the pocket at the end of this book.

CHAPTER VI.

ADMINISTRATION.

1. *Provincial Administrative System.*

The whole province was formerly under the control of a Viceroy, Tsung-Tu, commonly known as Chih-t'ai, who was also Governor of the province of Kansu. This post has been abolished since the revolution and the supreme head of the administration is now the Governor, formerly known as Hsün-fu or Fu-t'ai, who has become practically independent of the Central Government.

At the beginning of the Revolution, the official title of the Governor was changed to Tu-tu, but it has since been altered to Chiang-chun and Hsun-an-shih.

THE GOVERNOR.

The Governor, resides at Urumchi (Tihuacheng) and is responsible for the well-being of the province and is its head in all branches of the administration (except the Tartar administration, which will be referred to later). As regards the troops stationed in the province, the limits of the Governor's powers are very indefinite; being responsible for the internal and external security of the province entrusted to him, he is responsible for the disposition of the troops, and for the due provision of pay, rations, forage, etc. As regards drill and instruction, the troops are directly under the Chen-shou-shih, who has his own staff.

The immediate subordinates of the Governor are:—

FINANCIAL COMMISSIONER.

(1) "*The Ts'ai-chen-ting*, formerly known as the Pu-cheng-shi-ssu or Fan-t'ai, who is the Lieutenant-Governor, and Financial Commissioner (commonly called the Treasurer) of the province. He is responsible for the finances of the province, and controls the appointments to all civil administrative posts (nominally—actually the Governor aims at retaining supreme control in his own hands).

PROVINCIAL JUDGE.

(2) *The Ssu-fa-chou-pei-chu*, formerly known as the An-ch'a Shih-Ssū or Nieh-t'ai, who is the Provincial Judge. He is the highest judicial authority of the province for the decision of law-suits and the trial of important criminal cases, such as murder and political offences.

POLICE COMMISSIONER.

(3) *The Ching-wu-ting*, or Provincial Commissioner of Police.

FOREIGN AFFAIRS COMMISSIONER.

(4) *The T'ch-pei-chiao-she Yuen*, or special Officer for Foreign Affairs, who is in charge of the Chiao-she-chung-shu (General Foreign Bureau at Urumchi). This General Foreign Bureau, which deals directly with the Foreign Department in Peking, has under its control three local Foreign Affairs Commissioners, known as Chiao-she-fen-shu, which have been established at Tarbagatai, Ili and Kashgar to replace the old Chiao-she-shu. The idea was that foreign affairs and dealings with foreign consuls should be conducted through the local Foreign Bureaus, instead of through the Taoyins (or Taotais) and other territorial officials. With the collapse of Russia and the abrogation of the Russo-Chinese Treaty of 1881, the Ili and Chuguchak offices ceased to function properly. In actual practice (1926), the Chiao-she-fen-shu at Kashgar acts as a Foreign Secretary to the Taoyin, with whom H. B. M. Consul-General invariably deals direct, the Chiao-she-fen-shu usually being present at such interviews but only in a subordinate capacity.

ADMINISTRATIVE SECRETARY.

(5) *The Chen-wu-ting*, Administrative Secretary, whose functions are to prepare measures of reform in the Provincial Government.

MILITARY COMMISSIONER.

(6) *The Chun Wu-ting*, Commissioner of Military Affairs, who deals with matters affecting the armed forces in the province, but does not exercise any direct command.

The above six functionaries are departmental chiefs, and exercise considerable influence over the Governor, or Hsun-an-shih.

There are also three appointments of Chiao Yu-t'ing, Commissioner of Education: Shih Yu-t'ing, Commissioner of Industry: and Yun Hsiao-chu, Commissioner of Transport, which are merely nominal, for actually nothing has yet been attempted in the way of education, fostering industry, or improving the means of transport.

OTHER HIGH OFFICIALS.

There are three other officials, who, though of a rank almost as high as that of the Governor, still take their orders from him, viz. :—

The Ts'an-ts'an of Tarbagatai, who is in civil and military charge of that district.

The Chen-shou-shih of Ili, who, under the Manchu régime was styled Ili Chiang-chun, or Tartar General, whose duties are both civil and military.

The T'itai of Sinkiang (Provincial Commander-in-Chief) at Headquarters, Kashgar Chinese City. This appointment is now in abeyance.

This official was responsible for all the troops stationed within the jurisdiction of the Kashgar Taoyin (Taotai), but exercised no control over those in other parts of the Province, notwithstanding his designation of T'itai of Sinkiang.

For administrative purposes, Sinkiang is divided into four circuits, each under a Taoyin, and each circuit is sub-divided into a number of hsien or districts, each in charge of a Hsienyin.

TAOYINS.

A *Taoyin* (formerly known as Fen-hsun Tao, or Taotai, and, at the beginning of the Republican régime, as Kuan-cha-shih), has a fixed territorial division entrusted to him. He is less an administrator than a controller of officials, and, *ex-officio*, he does not, except in cases of appeal or of complaint against district officers, come into direct contact with the people, nor interfere with the proceedings of the district officers.

Nevertheless, he is the guardian of the laws and their interpreter, and the medium of communication between his subordinate district officers (Hsienyins) and the higher authorities at the provincial capital.

The remittance of the district revenue is effected through him. The Taoyin's military powers are limited.

The Taoyin is an important official for foreign representatives, for he is the pivot on which business outside the territorial administration turns. Formerly the intendants were appointed from Peking on the recommendation of the Viceroy, but this prerogative is now exercised by the Governor.

HSIENYINS.

Hsienyins (district officers) were formerly graded as Chih-fu, Chih chou, T'ung-pen and Chih-hsien, the higher of whom exercised a nominal supervision over the lower. These grades have now been abolished. District officers are all alike styled Hsienyins or Hsien-Kuans and are known locally as Ambans, who resemble *Collectors* in India. Their districts (hsiens) are units of administration with no inter-dependence.

The Hsienyin's duties are very varied. As the family was the unit of the Chinese nation under the Imperial régime, so may the district be considered the unit of the system under the existing administration.

He is responsible for the tranquillity of his district.

He is the judge, in the first instance, for all ordinary civil and criminal cases, and he acts as enquiring magistrate in capital cases, though sentences of death have to be confirmed by the Governor.

He supervises the collection of the taxes, and superintends irrigation, schools and jails.

NATIVE OFFICIALS.

The above mentioned officials are always Chinese; the subordinate officials are usually natives, and consist of Begs, Aksakals, Ming Bashis, Yuz Bashis, Oan Bashis, and Kuk Bashis.

A *Beg* is responsible for one or more villages, or a portion of a town. The number of houses in a Begship may vary from 100 to 10,000. An *Aksakal*, or head of a trade, is responsible for a section of a town. These officials are usually Mohammedans.

Ming Bashis, Yuz Bashis, and Oan Bashis, are responsible for districts which consist respectively of about 1,000, 100, and 10 to 20 houses.

The duties of the Begs and Bashis consist chiefly in the preparation of the tax rolls, the collection of the taxes, and the apportionment among the cultivators of requisitions for forced labour and transport.

A *Kuk Bashi* is responsible for the irrigation of the area watered by one channel. He is elected to the appointment by the cultivators of his district, and is paid by a fixed contribution of grain from each cultivator.

2. Administrative Divisions.

The province is divided into seven circuits, each under a Taoyin, and 50 districts (hsiens), each under a Hsienyin, as follows:—

Circuits.	Districts.
Tihua (Urumchi)	Tihua. Chitai. Changchi. Hutupi. Fukang. Fuyuan (Kucheng). Hsilai (Manass). Chenhshi (Barkul). Hami. Turfan. Shanshan (Pichan). (Total 11).
Tacheng (Chuguchak)	Tacheng (Chuguchak or Tarbatagai). Wusu. Owin. Shawan. (Total 4).

Circuits.	Districts.
Ili (Kuldja)	Ining (Kuldja). Chinho. Polo. Suiting (Suidun). Khargos. (Total 5).
Altai (Sharasumé)	Puerhchingho. Hapaho. (Total 2).
Aksu	Aksu Old City. Aksu New City. Wushih (Uchturfan). Baicheng (Bai). Shahyar. Luntai (Bugur). Kuchar (sub-district, Kurla). Yenchi (Karashahr). Weili (Lop Nor). Erhchiang (Charkhlik). Chiehmi (Charchan). (Total 11).
Kashgar	Shufu (Kashgar Old City). Shulo (Kashgar New City). Chiashih (Faizabad). Pachu (Maralbashi). Yangi Hisar. Sache (Yarkand Old City). Yarkand New City. Tsepu (Posgam). Lop. Puli (Tashkurghan). Merket. (Total 11).
Khotan	Keriya. Chira. Khotan. Karghalik. Karakash. Goma. (Total 6).

3. *Tartar Administration.*

The Nomad, or Tartar Administration as it is more usually called, is directly under the Li Fan Yüan, or Mongolian superintendency, and has no connection whatever with the Provincial Government. Its jurisdiction extends to all the Manchus, Mongols and Kirghiz tribes.

The head of this administration in the province was the Ili Chiang Chün, or military Governor of Ili, often known as the Ili Tartar General, but the post of Ili Chiang Chun has been reduced to that of Chen-shou-shih. His residence is at Hsin-ch'êng (Kura) 4½ miles south-east of Ili Fu (Sui-t'ing).

Under him was a military Assistant Governor (T'san-t'san Ta Ch'ên) at Tarbagatai, who rules the Manchus, Kirghiz, the 14 temples of Torgut Mongols under Prince Chin, and 14 temples of Öluts. The post of Ts'an-ts'an Ta-chen has been reduced to Ts'an-ts'an (without Ta-chen, a title suitable only under an Imperial régime).

Dependent on the Tartar General is a Major General (Fu-tu-t'ung) who has charge of the local Hsi-po Manchu colony in Hsin-chêng, and the various smaller colonies in the neighbouring plain.

The Tartar General also nominates three Brigadiers (Ling Tui Ta Ch'ên) who usually reside at Hsin-Ch'êng.

Their respective charges are :—

- (1) The local Ölut and Torguts.
- (2) Charkhar Mongols on the Borotala plain.
- (3) (a) The Alban Kazaks in the Tekes valley.
- (b) Several tribes of Kazai Kazaks round Kuldja.
- (c) A small tribe of Kirei Kirghiz in the Yulduz valley.

The tribal organization under these officials varies considerably. In the north the Torgut Mongols are divided into various tribes governed by 5 Princes, of whom the Hobuk-Sali prince, Chin, is under the jurisdiction of the Ts'an-tsan at Tarbagatai. The Kirei in the neighbourhood of the Black Irtish river are ruled over by 12 chiefs (Tsung-Kuan) over whom is a Duke (Kung-yeh) who in turn is under the Ts'an-tsan of Sharasume in Mongolia. In the south the various Öluts, Kirghiz and Kirei tribes owe allegiance to head chiefs (Bolus) and lesser chiefs (Tsung Kuan).

The Tartar General also has nominal command of the Ili mixed brigade of Lü-Chun, but, as a rule, this is left entirely to its Brigadier (Hsien-t'ung).

This division of rule between the Provincial and Tartar Government is undoubtedly a great source of weakness in this part of the province, for, not only does it prevent unity of policy, but the jurisdiction of the various officials is continually overlapping and friction, of necessity, results.

An effort is being made to abolish all offices formerly held by high Tartar officials, so as to bring the control of all the people, without distinction of race or caste, under the regular territorial officers (Taoyins and Hsienyins).

4. *General Standard of Administration.*

The whole government system is rotten to the core, and every official from the Tu-tu to the meanest Oan Bashi lives by systematic plunder. The officials are unpaid, but since their right to "squeeze" is recognized, the amount of their income is limited by their own discretion and the resources of their districts. Public offices are always sold; justice is sold; the enjoyment of public rights, such as water supply, can be secured only by bribes paid to the officials in charge, and there is no immunity whatever from exorbitant taxation, the proceeds of which go mostly to the private pockets of public officials. The district officials get their districts "for their sustenance" for a limited period, usually three years, and their sole aim is, not the improvement of the district, but the extraction from it of the largest possible sum in the time at their disposal. Sinkiang is a poor province, and towards the cost of its administration the other provinces of China used to contribute annually about 200,000 taels, yet the Chinese officials in the province are understood to obtain, by the various means at their command, a good annual revenue. Since the revolution, however, affairs have prevented the receipt of this subsidy, and the officials have been compelled, of necessity, to adopt a system of rigid economy. The only other effects of the revolution have been to put in power, if possible, a more corrupt class of officials, to lower the discipline of the province and to raise a general feeling of distrust both between the populace and the officials and amongst the officials themselves.

Formerly appointments were determined by competitive examination; the aspirant entered the ranks of the civil service by competition, the system forming a leading feature of Chinese policy. No part of the administration was so carefully organized, and the prize of a literary degree was at once a distinction and a passport to official appointment. Whatever may have been the demerits of the system it certainly ensured that an official should be a scholar and an expert in style and penmanship."

A certain number of posts in the highest grades may still be filled from the ranks of those who have obtained degrees, but the chief factor is undoubtedly one of money. There is always a number of officials temporarily out of employment; together they form a crowd of expectants who hang about the provincial capital on the chance of something turning up. They are at the disposal of the Governor to fill odd vacancies, to execute commissions, or to spy on the doings of others, this last being an important role, for *Wei-yuens*, or secret inspecting officers, from the capital are constantly perambulating the country.

From the administrative point of view, the following appear to be among the chief methods by which Governor Yang Tseng-hsin has consolidated his personal power during the last two or three years:—

- (1) Authority has been centralized. All orders of the Governor affecting districts go through the *taoyins* and all district matters are referred to them in the first instance, but if the matter is of the slightest importance, the *taoyin* refers to the Governor for orders. In such cases the Governor sends his reply expeditiously—in the case of references from Kashgar, the reply is sometimes received by wireless within 24 hours.
- (2) By the frequent despatch of *wei-yuens* (officers on special duty) to the various circuits and districts, a careful watch is kept on the activities of all officials.
- (3) The personnel of the administration now contains a large proportion of the Governor's own relatives and fellow-provincials, entirely in his power and dependent on him for their living. The Peking-appointed official is being gradually pinched out.

- (4) A strict censorship is exercised by the Governor over all post and telegraph offices, from which not even the correspondence of the highest officials is exempt. No Chinese subject, official or private, is allowed to receive newspapers or printed matter of any kind connected with current events. Any internal combinations or intrigue with the outside world against Urumchi are thus rendered extremely difficult.

By such means the Governor has built up a relatively homogeneous and coherent though not perhaps a very efficient administration, over the smallest details of which, either personally or through picked subordinates, he exercises a close supervision even into the remotest corners of the province.

Politically, the Governor draws much of his strength from the goodwill of the Tungans, that unpleasant but redoubtable race of Chinese Mohammedans who now form a majority of the population of such important districts as Karashar and Turfan and are to be found in considerable numbers in all the largest cities of northern Sinkiang. By a judicious combination of firmness and conciliation, Governor Yang has transformed the Tungans from a much-feared menace to Chinese dominion into the mainstay of his personal power.

The most important factor, however, in the internal situation is the reactionary but judicious policy of the Chinese towards their Turki subjects. Not only in Ili, but to a less extent in the south, the Soviet Government has been doing what it can by means of insidious propaganda to awaken the race—and class—consciousness of the Mohammedan population. Chinese policy is directed towards the prevention of this awakening. By means of the censorship described above and by other methods, not only is all written or printed matter dealing with current events excluded from the province, but the dissemination of "news" in writing among the inhabitants is effectually prevented.

5. *Education.*

The same policy is responsible for the official attitude towards education; all schools except those attached to mosques, at which nothing but reading, writing and the Koran are taught by the mullas, are forbidden and even attempts by private individuals such as Russian refugees to make a living by teach-

ing foreign languages are looked upon with disfavour. This stifling of progress may be highly reprehensible from the ideal point of view, but it at any rate serves to keep an almost exclusively agricultural population quiet and contented under Chinese rule; and after all, if the greatest happiness of the greatest number is the *summum bonum* for Sinkiang as for less secluded countries, there is much to be said for it. Certain it is that the one experience the Turkis have had in modern times of government by one of their own race has effectually cured them of any yearnings they may have had for racial autonomy; all observers agree that the people have no desire whatever for a return to the times of the Turki "Amir" Yakub Beg, who ruled the country after the traditional manner of the Oriental despot for 11 years after the expulsion of the Chinese in 1865. As an ancient Kirghiz of the mountains explained, the Chinese go "yawash yawash" (quietly); like Nature, they indulge in no leaps, and the people know exactly where they are with them. To such an extent, indeed, do the district magistrates rule through their Turki Begs and administer justice through the Qazis, that the country has in reality though not in name a large measure of self-government. There is oppression, but it is chiefly by Turki minor officials, and the Chinese are usually there to appeal to in case of need.

6. *Judiciary.*

Since the earliest days of her history China has had a department of justice, but it was not until 1912 that it was separated from the executive and formed as a distinct body. In so far as concerns Sinkiang the judiciary has no power and cases are rarely referred to it. Such questions as may arise in the province as should be adjudicated by the Supreme Court are not so dealt with, but if the necessity arises they are referred to the Ministry of the Interior. The formation of a High Court has been established in several provinces of China; this decides important civil and criminal cases, and also appeal cases from local metropolitan courts. These courts have not yet been established in Sinkiang where the district magistrate discharges judicial functions, referring important cases to Urumchi for orders.

As was the case with the old régime, magistrates are not conversant with the law in spite of the provisions of the criminal code which they ought to study diligently and make them-

selves perfect in the knowledge of the laws, so as to be in a position to explain clearly their meaning and intent, and to superintend and ensure their execution. The local magistrates are assisted by clerks and *begs* who possess no legal qualifications. The latter also prepare the written statements and they take down the evidence, write petitions and prepare memoranda for both accused and defendant. With such an irregular procedure, unqualified judges and lack of probity, it is not surprising that the road to justice is devious and beset with difficulties.

It is of course, recognised that China is in a state of disorganization, and that time is needed to reform the judicial procedure, but although several years have elapsed since the laws were more or less recodified they have not yet been applied with sincerity. Moreover, after the collapse of the Manchus, the Japanese code was imposed practically as it stood, and this is said to be now in course of revision to suit the needs and customs of the Chinese.

In criminal cases the Chinese courts move slowly, obstacles are often cast in the way of justice, and absurd excuses are given for the non-fulfilment of ordinary legal forms. The law of *habeas corpus* is unknown and a man may be in gaol indefinitely, awaiting trial. Indeed it would not be going too far to say that with the frequent change of officials a man might be in gaol for so long a period that no record of his offence can be traced, the why and the wherefore have been forgotten, only the man himself is extant, still undergoing the punishment of his lost crime.

Thus the administration of justice is still carried on in accordance with the methods prevalent in other departments of government. In civil actions fees are exacted from the litigants, while in criminal cases lines are inflicted when they are likely to be paid. Rich offenders are fined, the poor are beaten. Sentences of imprisonment are also passed, and for murder death is the sentence. The prisons are in a disgraceful condition. Corporal punishment is usually inflicted with a short stick on the back of the bare legs above the knees. The prisoner is held with his face to the ground, and the blows, rapidly given, cause a deep discolouration of the skin, which breaks if the punishment is unduly prolonged. Persons convicted of minor offences are sometimes loaded with a board (the *cangue*) 26 or 28 inches square, and weighing about 27lb., which is

carried about their necks day and night for the prescribed time, which has been known to extend to a month. Old offenders are sometimes punished by having an iron bar chained to the neck and one leg for life. In districts where crime is very prevalent, there are two Begs, one of whom attends exclusively to magisterial work. In large towns there are a few *darogas* or police under a Beg. Guards are stationed at the gates of towns; those at the main gate levy an unauthorized octroi duty, but for the maintenance of those at the other gates each householder has to make a small payment.

Still, reforms on a Western basis were being introduced, though up to January 1915, they had not borne any tangible results. The punishment of flogging is, however, less resorted to than formerly, and it appears that a new and milder criminal code has been adopted.

Qazis' Courts.—The Qazis' courts, which are maintained by the native population, deal with questions relating to marriages and inheritance, and with the witnessing of documents. The Qazis also administer justice in civil and revenue cases, subject to the approval of the Chinese, and settle minor disputes not requiring reference to higher authority. Civil cases are sometimes referred to them, but no order or decree thereon would be issued without the previous sanction of the Chinese, no matter what the finding might be. In criminal cases the Qazis have no jurisdiction, though all witnesses in such cases are sworn on the Koran before them.

In addition to his magisterial functions the Qazi attends weddings and funerals and performs the ceremonies in conjunction with the Imam, the person whose principal duty is to lead the public prayers. A Qazi also acts as a notary public and it is the custom for him to attest deeds of sale, land transfers, distribution of property, loan and trade bonds, and agreements and civil contracts generally. Payment is made by clients according to their worldly status and the nature and value of the transaction covered by the document.

Pauperism.—In Yarkand, Karghalik, and Khotan pauperism is very conspicuous. It is not generally known that slavery was abolished in Kashgaria as recently as 1897, over 2,000 slaves having been liberated during the 5 years 1893-97. This was due to representations made to the Indian Government by the British Agent at Kashgar. He was authorized to procure at fair compensation the release of all slaves who were British

subjects. Mr. Macartney set about his task with so much zeal that he stirred up local interest in his favour and soon obtained the liberation, not only of slaves of Indian nationality, but of many others.

Bench of Qazis and Mufties.—Intimately connected with the every-day life of the people and forming an integral part of the administration, which was also in vogue in the time of Yakub Beg, is the Bench of Mohammedan judges, called Qazis and Muftis, who administer the Shariat or Law of the Koran in each district.

A Qazi is appointed by the Chinese usually on the recommendation of prominent local residents. He exercises this office in a public place, the chief mosque or its vicinity being preferred, or it may be his own house to which the public are allowed free access. A Mufti is one who expounds the Moslem Law, and assists the Qazis, supplying them with "fatwas" or decisions. He must be well versed in the Koran and Hadis, and in the Moslem law works, as he gives decisions in difficult religious questions. Under the Chinese none of these offices is necessarily hereditary, although it is usual in Mohammedan countries for them to pass from father to son. (In India there are families who retain the titles of Qazi and Mufti, although the duties connected with these offices are no longer performed by them).

7. *Extraterritoriality.*

In the Anglo-Chinese Agreement of 1902 it was stipulated that China, desiring to reform her judicial system and to bring it into line with that of western countries, should receive assistance from Great Britain to that end, who, when satisfied that the state of Chinese law and the arrangements for its application warranted her in so doing, should surrender her extraterritorial rights. Clauses to the same effect were inserted in the treaties with the United States and Japan. Extraterritoriality consists in the right of British subjects to be tried in consular courts instead of by the Chinese.

Judging by the present condition of the province there is little likelihood of the state or arrangements of the law warranting such a surrender for a long time to come.

8. *Police.*

With regard to the maintenance of law and order in the cities and towns, Kashgar will serve as an example, though for various reasons the standard differs in other cities.

The city is surrounded by a wall and has four gateways corresponding to the four points of the compass. It is divided into four quarters in each of which are 30 wards each under a *pashrab*, an official somewhat similar to a thanadar, or a sub-inspector of police in India. The *pashrab* is assisted by *chakar-das* or police sergeants, and under them are watchmen who perambulate the streets at night. None of these individuals is paid by the State, but they are authorised to collect two dachins from every shopkeeper in their ward on every Thursday. Villagers who attend the weekly bazaar are subject to the same levy.

Each ward in the city numbers from 50 to 80 houses and has one watchman allotted to it; each householder pays 5 dachins monthly to the watchman, who in addition receives a small commission when a house or any immovable property is disposed of in his ward. In the bazaar and the commercial quarters each shopkeeper pays 8 dachins weekly to the watchmen in addition to 20 dachins per month for the provision of oil for lighting purposes.

The *pashrabs* and watchmen are thus paid by the people, but they are also paid by the thieves, whose leader is one of the most powerful men in Kashgaria, and by the gambling community. Cases are constantly arising where the *pashrabs* are involved in efforts to screen the culprits, they are not infrequently receivers of stolen goods, and probably in no country in Asia is the police force so inefficient and corrupt.

Formerly the Chinese authorities allotted special quarters to the begging community who swarm in all the towns of Sinkiang. This is no longer the case and the beggars live anywhere in the city and on the outskirts of it. The mazars, or shrines, particularly that of the shrine of Hazrat Apak, the last of the mulla-kings of Kashgar, are favourite haunts, each little colony of beggars has its leader, and the begging fraternity as a whole has a recognized chief with an estate near Kashgar, who is regarded by his followers as their spiritual leader, to whom offerings are periodically made.

The suburban police have duties similar to those in towns and the fees levied are on the same scale. Each yamen also maintains a number of secret police or agents whose ramifications extend through all classes of society in much the same way as the present spy system in Soviet Russia. In addition there are the inspecting officers who are secretly sent out by the Governor to report on prevalent conditions, the exactions of officials and the state of feeling amongst the people both from a political and economic point of view.

9. *Taxation and Revenue.*

In the collection of taxes "squeeze" is systematically employed. A certain sum is notified to the hsienyin of each district as the amount which he must provide; but as there is no public intimation of this amount, the inhabitants have no means of checking the demands made upon them. The hsienyin consequently instructs the begs to raise as much more than the regulation sum as he thinks the people will stand without making an outcry. The begs, being unpaid, have to arrange for their own interests, and they instruct the bashis, who do the actual collecting, to levy more than the hsienyin has asked, so that when the Bashis have added something on their own account the burden on the tax-payers is a fairly heavy one. But the tax gatherers do not go too far. The Chinese are always there to appeal to, and the death of Ma Titai in 1924 and the dismissal of the Amban of Sariqol on the Pamir frontier in 1922-23 were both due to the complaints of those oppressed by their extortion.

The system of taxation in Sinkiang is intimately connected with the conditions of service of the district magistrates. Taking the yamen, or headquarters of a hsienyin, as a collecting centre, there are five officials in charge of sub-offices, which deal with:—

Tou Ch'eng Shui	Weights and Measures Tax.
Sheng Hsu Shui	Live Stock Tax.
Pai Huo Shui	Miscellaneous Goods Tax.
Ch'i Shui	Deed Tax.
Yu Shui Mo Shui	Oil and Water Mills Tax.

An account has been given above of the begs and minor officials in each district; it is through the agency of these

that the revenue is collected and the various taxes imposed. The tariff at present in force in the province is—

Tax on sale of land and houses—

Water Mills . . .	64, 48 and 40 tengas per grinding stone per annum according to size.
Oil presses . . .	44 tengas per press per annum.
Wine distilleries . .	<i>Nil.</i>
Live stock . . .	$1\frac{2}{3}$ tengas per sar of the purchase price of any animal.
Grain huskers . . .	40, 35 and 30 tengas per annum according to size and capacity.

Land Tenure.—The land tenure system in Sinkiang has resulted in a number of small landowners in fee-simple tenantry a few acres, rather than in landlords possessing a monopoly of the soil. There are no restrictions on the sale and transfer of land where the transaction does not involve dealings with a foreign subject.

The principal tax, the *yushur* or *yuzhur* (literally one-tenth part) is levied on land which is classified under the headings *aral* or well-irrigated land, and *ak*, or white land; the land under each of these headings being of three qualities, which are taxed at different rates. No allowance is made for official errors in valuing the land.

The assessment is still carried out in accordance with the land classification made more than forty years ago under each heading. This followed a few years after the fall of Yakub Beg, and the classification specified the land as first, second and third grade. The arid land was not classified, but the landholder not infrequently encroaches on such ground in his vicinity with the result that his holding shows a greater amount than the title deeds provide for. The rate of taxation on land, is now 6 tengas per mu of land together with 1 charak of maize, 1 charak of wheat, 6 tengas on account of yield of straw, and 3 tengas for firewood. This makes a total sum of 15 tengas (about Rs. 2-4-0) and two charaks of grain (1 charak = $18\frac{1}{2}$ lbs. nearly). The total tax expressed in acres and British currency, on 1 acre of land would be 12 shillings approximately.

Thus the basis on which payment of the tax is calculated is the quantity of ground in possession of the individual whether the ground be cultivated or not. All those who are not in possession of real or landed property do not pay taxes.

The tax is generally paid in kind, the recognised products being rice, wheat, Indian corn, chopped straw, wood and dried lucerne. It is not unusual for the officials to reject the produce offered on the ground that it is of inferior quality, until a present is tendered along with it, after which all objections are withdrawn. In three out of the fourteen begships of the Yarkand district, the land-tax is paid in cash, and though there is a certain authorized rate for the conversion from kind to cash, the actual rate at which it is effected is somewhat higher. For Yarkand, the conversion from kind into cash is according to the following official scale:—

Per picul (133 lb.) of wheat	Taels 4.432
Indian corn	„ 3.357
Per ching (1.33 lb.) of wheat straw	„ 0.040
For official receipt for payment of above grain tax	„ 0.025

Other taxes are:—

A tax on the sale of land, which is properly one-twentieth of the purchase price, but really amounts to one-tenth, and is paid by the purchaser.

A stamp duty introduced in January 1915. Bonds for the loan of money, the lease and mortgage of lands and of houses, pawnbrokers' tickets, bills of exchange, policies of assurance etc., have all to bear stamps of various values.

Taxes on sales effected in the bazars, which are nominally one-twentieth of the sale price, and which are paid by the purchaser when the subject-matter of the sale is living animals, but by the vendor in all other cases.

A rice mill pays from 1 to 2 sarrs (3 to 6 shillings) annually, and flour mills from 2 to 10 sarrs (6 to 30 shillings) annually, according to the output.

Gold-diggers are taxed to the extent of one-third of the gold which they find.

An indirect tax consists in the provision of labour (by the agricultural class) for the upkeep of water ways, canals, roads,

bridges, etc., or transport on certain occasions, and in the provision of horsed carts for the carriages of troops and Government property. The unit of assessment for these duties is the *choka*, or paying unit, which consists on an average of about 15 houses. In proportion to the demands made, each *choka* has to furnish one labourer, one cart, and on payment a fixed quantity of building material, but the payment does not exceed one-tenth of the value of the materials taken.

Artisans in the towns, who are formed into guilds under a *chong-ust*, are obliged, on demand, to work for Government for five days in a month at a rate of 80 pul (about 4d.) per working day. Beyond this period work is paid for by agreement.

In addition to the regular taxes, the local authorities occasionally invent special taxes for their own special benefit.

THE NOMAD TRIBES.

The nomad tribes in the Kashgar basin are administered by Begg, assisted by Yuz Bashis and Ilik Bashis (heads of fifties). They pay no taxes to the Chinese Government, but the Begg are paid by the *heralj* and *zyaket* taxes. The former is paid only by those nomads who are engaged in agriculture and amounts to one-fifteenth of the annual produce of their fields. *Zyaket* is paid by stock-owning nomads, and amounts to sheep or 20 tenga (about 4s.) per 100 sheep, or 10 horses, or 5 camels. Horned cattle are not taxed. They are also obliged to provide fuel at fixed rates in the forts on the Naryn and Irkeshtam road and to maintain, also on payment, at certain posts, a fixed number of postal *jigits*, and guards for the watching of the frontier.

The Kirghiz are exempt from taxation, this having been determined upon by the Chinese in order to ensure the loyalty of the nomads, but they furnish certain posts along the frontier and are used for despatch purposes and keeping a general watch in the mountains and border districts.

Under Article 12 of the Russo-Chinese Treaty of 1881 the British in common with Russian subjects have claimed exemption from payment of dues on goods whether of foreign or of local production so long as such goods are the property of the subjects concerned. The only people who were not unques-

tionably exempt were the Chinese subjects. With the abrogation of the treaty a drastic change will come over the taxation problem, and in the absence of any agreement fresh abuses may arise.

10. *Customs.*

The following are the official regulations fixing the amounts leviable, but these regulations have been so perverted by the methods of embezzlement that it is practically impossible to differentiate between the regular and the irregular tax, nor can one determine what part of the sum actually collected finds its way into the treasury. Then again no accurate estimate of the incidence of taxation can be formed, for in addition to the illegal exactions going on, and the universal speculation, the taxes levied in one district may in practice differ from those taken at another, and those imposed by one official in a given district, may be quite different from those levied by his successor. The total revenue for 1921 is said to have been 1,400,000 sars, of which 146,000 sars were collected in the Kashgar district. This is the sum credited to the State and does not represent that taken from the people.

General Customs Tariff, since 1921-22.

<i>Article.</i>	<i>Amount levied.</i>
Coarse cloth, per piece	2 to 4 dachins.
„ per pony load exported	2 sars.
Chakman cloth, per piece	5 dachins.
„ per pony load exported	3 sars.
Cotton, per 10 charaks	1 sar.
„ per camel load	1.8 sars.
„ per pony load	1.2 sars.
„ per donkey load . . . . .	.6 sars.
Numdahs, imported	10 dachins.
„ exported, per pony load	3 sars.
Wool exported, per camel load	1.5 sars.
„ per pony load	1 sar.

Wool exported, per donkey load	. 5 sars.
Iron, imported, per camel load	. 1.8 sars.
„ per pony load	. 1.2 sars.
„ per donkey load	. 6 sars.
Importation of foreign piece goods such as velvet, satin, chintz, etc., per pony load	. 4 sars.
On each pony load of brocade im- ported	. 19 sars.

11. *Monetary system.*

Mints have been established at Urumchi and Kashgar for the coinage of silver and copper money.

The silver coins are: the "Tael," or "liang," or "saar," as called by the Sarts, also the following pieces which are decimal parts of the tael, *viz.* :—

Tael 0.1 = Chinese 1 tsien = Sart 1 miscal.

„ 0.2	„ 2	„ 2	„
„ 0.3	„ 3	„ 3	„
„ 0.5	„ 5	„ 5	„

The original value of the tael was the value of 1.333 ozs. of pure silver; but the Sinkiang tael is now much debased in value.

One "tael" is equal to 400 "red cash" or "dachins."

The Chinese reckon decimally; but the Sarts, whilst using the same coinage speak in "tengas" and "puls", though neither the "tenga" nor the "pul" exists as a coin. The Sarts divide the "tael" or "saar" into 16 "tengas," and the "tenga" into 25 "dachins," and the "dachin" into 2 "puls."

A Chinaman would reckon a sum of money of 5 "saars," 13 "miscals" and 48 "dachins" as, 6 "liang," 4 "tsien" and 2 "fen." The "tsien" and "fen" are the 1st and 2nd points of the decimal, respectively. A Sart, however, would count this sum as 101 "tengas" and 6 "puls."

The "yamba" (in Chinese, "yuen-pao"), originally a shoe of pure silver weighing 50 "liang" or 66.65 ozs., is now used as a general term denoting 50 "saars" or 800 "tengas."

As a 5 "miscal" or 8 "tenga" silver piece (silver) exchanges for about 1 rupee, 1 "yamba" or 50 "taels" should be worth rupees 100.

1 "tael," or 16 "tengas," or 400 "red cash" equals Rs. 2.

1 "tsien," or 1 "miscal," or 1 "tenga" and 5 red cash equals 3 annas $2\frac{1}{2}$ pies.

1 "fen," or 4 "red cash," equals 3-3 pies.

1 "tenga," or 25 "red cash" equals 2 annas.

1 "red cash" or "dachin," or 2 "pul," equals 1 pie (1-12 annas).

Ever since the Chinese revolution, coins, whether in silver or in copper, have been disappearing from circulation, and by the autumn of 1921, silver coins had altogether disappeared. At the same time notes have become more and more prominent so that the present value of these amounts to no less than 6,000,000 taels, a sum represented by about 5 years' revenue of the Province. These notes are supposed to be valid for the payment of taxes, but are not exchangeable at a Government office for silver or copper. Nominally, all notes have the same value, viz., one "tael," or 400 "red cash." There have been two separate issues, the older description, known as the "lung-piao," has more or less maintained its silver coin value of 1 Sinkiang "tael," and it circulates all over the Province. The later issue, however, known as the "hsiao-lung-piao", circulates only in Aksu, Kuchar, Ili, Urumchi, etc., in the northern parts of Sinkiang, and there the "hsiao-lung-piao" has depreciated by about 30 per cent of its face value, as represented by the "tael" coin or the "lung piao."

Russian money, both notes and coins, was in general use throughout the western part of the Province, and Russian gold pieces are still in general use.

Generally speaking, the Russian rouble was worth $\frac{3}{4}$ tael in 1914; but it has considerably depreciated since the beginning of the European War.

A note on the exchange situation as it existed in May 1923 is given in Appendix "A".

12. *Weights and Measures.*

The following weights and measures are current in Sinkiang :-

Weights.

10 li . . .	= 1 fen (candareen)	= .0133 oz.
10 fen . . .	= 1 ch'ien (mace)	= .133 „
10 chi'en . . .	= 1 liang (tael or ounce)	= 1.33 „
16 liang . . .	= 1 ching or jing (catty)	= 1.33 lb.
100 chin . . .	= 1 tan (picul)	= 133.0 „

1 patman = 573.44 kilogrammes.

1 ghalbir = 71.68 „

1 charak = 8.96 „

The picul is usually taken as equal to 133 lbs. avoirdupois. The liang, or tael when used for weighing silver varies in different parts of China. The customs, or Haikwan, tael is fixed ; its weight is 582.9 grains = 37.783 grammes.

Linear Measure.

10 fen = 1 ts'un = 1.31 inches.

10 ts'un = 1 ch'ih = 13.1 inches.

10 ch'ih = 1 chang = 11.0 feet.

A Chinese foot equals 13.1 inches approximately. A p'u is a pace of 2 ch'ih. The standard of distance is the potai, which equals 10 li or $3\frac{1}{3}$ English miles. Travelling in flat open country 1 potai is usually taken as an hour's march. The stages vary from 7 to 8 potai.

Square Measure.

240 square p'u = 1 mou (Chinese acre).

100 mou = 1 chieng.

The mou or Chinese acre is equal to about $\frac{1}{4}$ th of an English acre.

Measures of Capacity.

10 ho	= 1 sheng.
10 sheng	= 1 tan.
10 tan	= 1 shih.

These measures are used for grain, etc. Milk and wine are sold by weight.

CHAPTER VII.

COMMUNICATIONS.

1. *Roads.*

The routes of most importance are the North and South Roads leading from China Proper, the one through Lanchowfu and Hami to Urumchi and Kashgaria on the north, the other through Suchou and by the southern edge of the Tarim and Takla Makan deserts to Khotan and Kashgar, and the Karakoram (Leh—Yarkand) and Gilgit (to Kashgar) routes from India. The mountainous nature of the frontier with Tibet and with Indian territory necessitates the exclusive use of mule-tracks between these countries and Sinkiang, while the frontier with Russian territory, although very mountainous throughout, is crossed in a few places by cart-roads, constructed generally under considerable engineering difficulties.

Prior to the Russian Revolution, Russian influence was all-powerful in Kashgaria, and good roads were constructed under Russian supervision from Kashgar to Andijan on the Central Asian Railway *viâ* Irkeshtam and the Terek Pass, and from Kashgar to Naryn in Semirechia *viâ* the Turgat Pass. This latter route was in excellent condition in 1909-10, but in August 1921 it was found in such a bad state of repair as to be impracticable for carts and would require time and labour to make it fit for vehicular traffic.

Quite passable roads connect all the chief towns and larger villages, and it is possible to drive in a carriage almost anywhere within the great oases of southern Sinkiang without much difficulty. There is of course no metalling of any kind, but as the clay soil is firm and only about 1 per cent. of the traffic is wheel-borne, there are no ruts: indeed many of the roads would compare not unfavourably with the average rural unmetalled road in Europe. Bridges, albeit often rickety ones, over the numerous canals and streams are kept in some sort of repair on the "begar" ("forced labour") system; over the big rivers ferries, with barges large enough to take 100 men or 20 horses at a time, are kept up. The only drawback from the point of view of the more rapid forms of wheeled transport is

the frequency of shallow irrigation-channels which cross the public highway and have to be negotiated slowly. Government rest-houses (often small and jerry-built affairs, it is true) are to be found at every stage along the main routes, in addition to the local *serais*. An interesting instance of enterprise in the opening up of the new routes on the part of officials is afforded by the work of Ch'en Chi-shan of Khotan, who built rest-houses along the Khotan river route from Khotan right across the Takla Makan desert to the Tarim river south of Aksu, a matter of 300 miles without a habitation except the huts of a few wandering shepherds.

There has only been one motor car (1924) in the province, at Urumchi. This car was brought from Peking and was to return there at the first opportunity. Motoring is not to be recommended in southern Sinkiang; even if it were possible to transport a car across the high passes and sandy deserts which defend the country on every side, the irrigation channels mentioned above as crossing the roads every few yards would be a source of irritation even in cultivated areas, while between the oases the exceedingly fine sand of the loess desert would make progress impossible without a caterpillar wheel attachment or similar contrivance.

Full details of all routes into and within the province are given in "Routes in Sinkiang, 1926".

2. Railways.

There are no railways in Sinkiang although a perfunctory survey for a line has been carried out through Kansu to Urumchi. In the present condition of China, the introduction of railways in the west would render a great service, as the weak control exercised over the western provinces is mainly due to defective communications and the influence of the Central Government is exhausted before it reaches the western borders.

Goods from Tientsin are (1927) again beginning to come by the Manchurian, Siberian and Central Asian Railways.

In Soviet Turkistan, the Semirechia and Andijan branches of the Central Asiatic railway are working to Pishpek (Frunze) and Andijan. From Andijan motors are running to Osh: and the motor road is being extended (under construction, 1925) from Osh to Gulcha. (See "Military Report on Soviet Turkistan, 1928.")

3. *Waterways.*

The Tarim.—The rivers of the Kashgaria basin are not at present used for purposes of navigation, but Colonel Korniloff considers that it would be quite possible for small steamers, of not more than 3 feet draught, similar to those used on the rivers of Soviet Turkistan, to travel on the Tarim from Tugarak (near Yarkand) to Lop Nor; on the Konche River from Karashar to Tikkenlik; on the Aksu river from Aksu to its mouth; and on the Charchan river from Charchan to Kara Buran. This would, however, appear to be possible only at high water, as Sven Hedin, who travelled down the Tarim from Lailik to Lop Nor between September and December 1899, in a ferry boat which had a draught of 9 inches, states that he ran aground every day. On the other hand, a small steamer of 18 inches draught would be able to avoid sand banks on to which the ferry boat drifted perhaps through want of motive power.

The Irtish River.—Is navigated by a line of Russian steamboats as far as the Zaisan lake and it has been proposed to extend this service to the Black Irtish which is probably navigable to a point some distance south of the Chinese frontier. This would undoubtedly have a very stimulating effect on trade in this district and would greatly increase the importance of Tarbagatai (Chuguchak) as a trading centre, and of the Tarbagatai—Sharasumé trade route to Kobdo in Mongolia.

The Ili river.—Is navigable for country boats as far as Kuldja and a concession has been granted to a Russian Sart to introduce this method of river transport. This will no doubt facilitate and cheapen Russian trade with this part of the province. It may eventually prove possible to utilise small shallow draft steamers on this river.

4. *Postal Services.*

Since 1910, improvements have been gradually introduced into the Chinese postal arrangements in Sinkiang. The official "i-chan" service, which was for the transmission of official, but not private, correspondence, has been abolished along the main routes, and the postal administration at important centres has now come under the control of the Director-General of Posts at Peking, who in Sinkiang, is represented by a Postal Commissioner at Urumchi. A number of post offices, on the European model, have been opened, and the payment for the transmission

of letters is effected by means of postage stamps, similar to those used in China Proper. Posts are carried by men on horseback and the relays are so satisfactory that a letter from Kashgar will reach Urumchi in about 12 days.

Gilgit-Kashgar Mails.—His Majesty's mails are carried from India *via* Gilgit to Kashgar. From Gilgit they go by runners as far as Mintaka Aksai and thence onward by dâk men on ponies. The mail leaves Gilgit every Monday and takes 18 days to reach Kashgar under normal conditions. A "news-writer" is maintained in Tashkurghan to deal with posts. From Tashkurghan the mail takes $5\frac{1}{2}$ days to reach Kashgar.

Runners and dâk men have a bad time over the passes in the winter months and in crossing the swollen rivers in the summer, but fatal accidents have been few.

This postal carrier service is under the Foreign and Political Department of the Government of India.

Letters take two months to reach Kashgar from inner China and parcels four to five months. From Kashgar to Keriya, 413 miles (including 150 miles of sandy desert), the postal couriers take ten days. The service between Keriya and railhead at Paotowchen, nearly three thousand miles, is by far the longest courier-borne service in the world. The efficiency of the Postal Service is the more creditable in view of the enormous difficulties the department has to contend with. These, to quote a recent "Report of the Chinese Post Office", include "the vastness of this province, the desert and mountains, the lack of reliable information, the scanty nomadic population, the diversity of races and languages, the small proportion of the population able to read and write, the ignorance on the part of the public of postal regulations or even of the benefit to be derived from a postal service, the poor elements from which to recruit postal employees, the constant difficulty encountered not only in procuring, but in training, couriers to run long and difficult lines through arid country where subsistence for neither man nor beast can be found, where there are dangerous rivers to negotiate and where attacks on couriers by wandering tribes are frequent."

Up to date, the postal business has been limited to the transmission of letters and newspapers. Parcels have not been accepted, nor money orders issued. In 1912, the number of articles transmitted was 810,000 as against 787,000 for the previous year.

The postal lines now working are :—

Ansichou to Urumchi, *viâ* Hami, and Kuchengtzu.

Urumchi to Wusu, *viâ* Suilai.

Urumchi to Tacheng (Tarbagatai) *viâ* Wusu.

Wusu to Kuldja *viâ* Suiting and Hwei-yuen.

Urumchi to Keriya, *viâ* Toksun, Karashahr, Kuchar, Aksu, Maralbashi, Kashgar, Yangi Hisar, Yarkand, Karghalik, Goma and Khotan.

Karashahr to Erh-chiang (Lop Nor).

Postal Tariff.—The postal tariff is :—

Letters.—To and from places within Sinkiang 3 cents (9 local copper cash) for each 20 grammes, or fraction thereof. From places in Sinkiang to places in China Proper, or *vice versâ*, 6 cents.

Newspapers.—To and from places within Sinkiang $\frac{1}{2}$ cent per 50 grammes weight.

From places in Sinkiang to places in China proper, or *vice versâ*, 1 cent.

The Russians had their own mail services from Kashgar to Naryn, Kashgar to Osh, Kashgar to Murghabi (*viâ* Tash Kurghan) Djarkent to Kuldja and Bakhti to Tarbagatai. These were under the control of the political service and are not managed by the ordinary Russian postal administration. These services are being reintroduced by the Soviet Consul-General, Kashgar, but are still uncertain and irregular (1927). Up to 1927 there were 2 posts a week, and 3 parcel posts a month, between Osh and Kashgar. The Russian post office at Kashgar issued money orders on Russia, and on foreign countries within the Postal Union.

Post Offices exist at the following places (Postal Atlas of China, 1919) :—

- | | |
|----------------------------|-----------------------|
| 1. Tihwafu (Urumchi) | District Head Office. |
| 2. Kuchengtze (Kitaihsien) | 2nd Class. |
| 3. Hami | " |
| 4. Turfan | " |
| 5. Wusu | " |

6. Tacheng (Tarbagatai	or	
Chuguchak)		2nd class.
7. Suilaihsien (Manass)		"
8. Ningyuan (Kuldja)		"
9. Suiting		"
10. Hweiyuan		"
11. Yenkifu (Karashar)		"
12. Kuche		"
13. Aksu (Wensuhfu)		"
14. Shufu (Kashgar)		"
15. Kuerhlei		"
16. Pachuchow		"
17. Sochefu (Yarkand)		"
18. Hotienchow (Khotan)		"
19. Shulehfu		3rd class.

In addition to the above, there are 33 Postal Agencies.

5. Telegraphs.

Chinese Lines.—The telegraph service is under Chinese control and although improving it is slow and unreliable chiefly owing to the insufficiency of the pay allowed to the staff and to the low power employed at the stations. Telegrams in code are frequently so mutilated in transport as to be undecypherable. Delays are constant and a telegram from Peking to Kashgar may take anything from 2 to 20 days.

The pay of the telegraph employees is calculated in *kuon-piao* taels, on the basis of one *kuon-piao* tael being equivalent to one Mexican dollar, where the real value of the *kuon-piao* tael fluctuates between .4 and .28 of the Mexican dollar. So low is the power used along the line, at any rate in Sinkiang, that messages have to be resignalled 13 times between Kashgar and Urumchi. The result is that telegrams in code or in English between Peking and Kashgar usually arrive in a hopelessly corrupt state after a delay of a week or more. The telegraph line stops at Kashgar, the important commercial and agricultural centres of Yarkand, Khotan, Karghalik and Yangi Hisar not being served. This is the more surprising, in that a line connecting Yarkand with Kashgar, Urumchi and Inner China could not fail to be an exceedingly paying proposition.

From Peking a telegraph line runs through Sachow, Anhsi-chow, Hami and Turfan to Toksun. Here the line branches; one branch running west through Kuchar, Aksu and Maralbashi to Kashgar; the other turning north to Urumchi. At Urumchi a line runs east to Kucheng, while the main line runs west to Schiko. At the latter place the line again bifurcates; one branch running north through Yamatut'ai to Tarbagatai (Chuguchak); the other following the Great North-Road west to Ili Fu (Suiting) and then turning east to Kuldja.

British lines.—The nearest British telegraph office is at Misgar.

Russian lines.—A Russian wire crosses the frontier from Bakhti and terminates at Tarbagatai (Chuguchak). This is not connected with the Chinese line but the offices are close together and messages are interchanged, provided the sender of a message has some one at Chuguchak to take delivery of it and to pay for its further transmission.

Another Russian line runs from Vyerni to Djarkent and thence crosses the frontier to Ili Fu (Suiting) and Kuldja.

At Irkeshtam there is another Russian terminus. This line however does not cross the frontier, but the Chinese Government have constructed a line from Kashgar to that place which however is not reliable.

Wiring and Poles.—The whole of the Chinese system is single wire, except the 6 miles between the cities of old and new Kashgar, where the wire has been doubled. There are about 22 poles to the mile. These are made of firewood which is obtained from the Yulduz and Tekes valleys. The poles are straight and deeply planted.

State of Repair.—The state of repair is only moderate. There is not a sufficient staff of workmen, nor are there any inspectors. The post runners are expected to report any damage to the line.

Interruptions.—The line is especially liable to interruption between points 60 miles east and 40 miles west of Maralbashi owing to the floods in summer, and in the Diwantchi hills between Toksun and Urumchi on account of snow drifts in winter. The section between Yamatut'ai and Tarbagatai (Chuguchak) is, however, the worst on the whole system and is continually breaking down, particularly during the blizzards in winter.

Language.—Although the forms in use are printed in English practically none of the operators can read or write that language, although they are familiar with the English alphabet. Telegrams can be sent in any European language written in Roman characters or in Chinese. Messages in the local language are translated into Chinese and sent according to the usual Chinese code system.

Operators.—The operators are extremely indifferent and very slack and there are many errors and delays.

6. *Wireless Telegraphy.*

In 1914 the Filippi Expedition received, with extraordinary distinctness, wireless time signals sent to them at Suget, Yarkand, and Kashgar, from Lahore.

In 1923 Major Dockray (late Royal Air Force) completed the erection of wireless stations at Urumchi and Kashgar for the Marconi Company on behalf of the Chinese Government under a contract signed in 1919. Major Dockray, at Kashgar, received messages from Tashkent, Urumchi, Rangoon, Colombo, Nauen (Hanover), Leafield, Paris and several other stations.

In July 1924, the stations at Kashgar and Urumchi were in communication with each other and with Peshawar. They are in charge of Chinese personnel who appear keen and intelligent though they are necessarily inexperienced engineers.

The call signs are :—

Urumchi XRM

Kashgar XRK

The Urumchi station has 3 steel and iron masts and is in all respects a replica of the Urga (Mongolia) installation.

In 1924, no gasoline being available, Mr. Casperd of the Marconi Company adapted both Urumchi and Kashgar stations to kerosene which is obtained locally. Both stations have been running more smoothly on kerosene than they did in 1923 on gasoline.

The stations at Urumchi and Kashgar, together with the third erected under the same contract at Urga by Major Dockray in 1921, have been constructed at a cost of £180,000 and consist of 25 kilowatt Marconi installations, working on a 5,000-metre wave and having an effective range of 1,000 miles. The entire plant as well as the cement and other special materials had to be

brought from railhead by cart and camels, the caravan for the Kashgar station alone consisting of 1,100 camels and 117 carts.

The use of local kerosene, instead of gasoline brought on carts 3,000 miles from China Proper, has reduced the running costs of the two stations to a fraction of what they would otherwise have been; even so, however, the prospects of the service, if placed on a commercial basis, ever being self-supporting is remote. As regards official use of the Kashgar-Urumchi service by the Chinese, the latter have not (contrary to expectation) shown any signs of boycotting it, now that it has been actually established; messages were exchanged by the Governor and the Taoyin of Kashgar with reference to the June, 1924, operation in Kashgar against Ma Titai. At the present time Kashgar and Urumchi are in direct and constant communication with Peking, and direct communication with Mukden has been established by both stations, also communication with Harbin *via* Peking. The quantity of traffic dealt with is at present small, but is steadily increasing. The Chinese personnel have carried on the wireless station in a manner most creditable to themselves considering their difficulties. These difficulties—provision of kerosene, lubricating oil, stores, etc., (not to mention necessary funds, including even their own pay), are so great, when the apathy of the local Government towards the wireless and complete lack of assistance is taken into account, that it is a matter of surprise that the system is still working at all, nor can it be relied upon to continue indefinitely under present conditions.

By an informal arrangement with Mr. Chien both cypher and *en clair* messages are transmitted from H. B. M.'s Consul-General to Peshawar or Urumchi at the rate of 18 cents (5*d.*) per word. It has been further arranged with the Director-General of Works, Simla, that the Government Radio, Peshawar, shall receive and forward by wire a limited number of private messages for approved British subjects and others at Kashgar at a further cost of annas 2 per word in addition to the ordinary Indian Telegraph charges. British Indian traders frequently use this method for sending urgent messages to their partners in India.

7. *Visual signalling.*

Visual signalling is unreliable in the Kashgarian plains owing to the haziness of the atmosphere. North of the Thian Shan, however, and in the mountains, the atmosphere is clearer and this method of communication could be employed up to long distance.

CHAPTER VIII.

POLITICAL.

1. *Internal Situation.*

The natives, who are singularly lacking in any sort of spirit or initiative, are on the whole well affected towards the present Government and have no active desire for any change. The Chinese yoke does not weigh heavily on them. Taxation is never really oppressive, for the most greedy official hesitates to incur the risk of causing a mass complaint to the Governor, who, though permitting ordinary graft, has no intention of allowing it to reach such proportions as to endanger the security of his Government, *vide* the action taken by him in the case of Ma Titai of Kashgaria. There is a sort of old-fashioned justice administered to them by the Chinese tribunals, which, although frequently liable to miscarriage, satisfies their requirements. It is true, the Chinese do nothing to improve the country; but improvements are not what a backward race like the Sarts clamour for. Much wealth has, however, been accumulated by the people during the years of peace, which Sinkiang has enjoyed under the temperate rule of the Chinese, and there is no sedative more powerful with a naturally apathetic race like this than that derived from the worship of mammon. One characteristic of the natives is worth remarking; it is their entire want of patriotism as Sarts. Each city retains its own individuality, and there is no one who possesses sufficient influence amongst the population of the different towns to unite them, so as to make common cause against a common danger. Such being the nature of the people, they would simply submit to a Russian occupation whenever it should take place. There is no disposition amongst them, however, to court such an occupation. Besides, there exists an antipathy of race between the Andijanis and the Sarts, and any arrangement which would tend to bring them into closer relationship would be disagreeable to the latter.

The great revolution of 1911-12 had little effect on the native population, who regarded it as affecting only the Chinese, and left the latter to settle their own differences in their own way.

The only result appears to have been the placing of a more corrupt and less statesmanlike body of officials in power, and a general loosening of the bonds of law and order.

2. *External Relations.*

Relations with Russia.—During the revolution which convulsed the whole of Sinkiang in 1871, the Russians occupied the district of Ili, of which they still retain the western portion. The advantages which they secured from the native rulers of Kashgaria in 1872, were never lost on the return of the Chinese, who, by the treaty of St. Petersburg, conceded to Russia more than the Amir of Kashgar had granted. The latter appears to have given up to Russia all the country about the Great Karakul lake and this the Russians have still retained.

Since that time, Russia greatly strengthened her position with regard to Sinkiang by the extension of communications, rail and road, in Russian Turkistan. It was recognised in 1914 that she dominated the situation in Kashgar, and though there has been a lull in Russian activity owing to the years of Russian Revolution, it was evident in 1923 that she intended again to consolidate her position. In case of war between Soviet Russia and China, the former would occupy at least the portion of Sinkiang to the north of the Thian Shan mountains and probably also Kashgar and Yarkand. Pretexts for occupation can also be contrived during peace. In case of internal disturbances, as was shown during the revolution of 1911-12, the Soviet may feel compelled to intervene in order to preserve order on her frontier.

Moreover, the rise of Bolshevism and the course of events in Soviet Turkestan must necessarily have been exerting considerable influence on Chinese Turkestan, while at the same time they have a bearing on India and the Indian border land.

Prior to the Great War and the revolution in Russia it was generally regarded as an accepted probability of political development that Sinkiang would pass into the hands of Russia. This danger has been averted for the moment at any rate, but it is not yet possible to predict what may happen in the near future with the creation of new and independent states adjacent to Chinese territory, coupled with the advent of Afghanistan as an independent Moslem power with territorial aspirations and dreams of hegemony in Central Asia. The Chinese themselves

have not remained indifferent to the march of events, and appear to view with some anxiety the potential *entente* between the Afghans and the Central Asian States, and the Chinese realise that they stand powerless against any aggressive tendency from whatever quarter it may appear.

Ever since their effective occupation of Semirechia, Fergana and the Russian Pamirs up to the Chinese frontier in 1920-21, the policy of the Soviet has been resolutely directed towards the establishment of commercial and political relations with Chinese Turkestan. In the spring of 1922 there appeared at Urumchi a Soviet Mission headed by an ex-loafer from the slums of Tashkent called Kazanski and provided with the usual full complement of propaganda agents and Cheka spies, thinly disguised as clerks, escort and menial staff. The size and obvious intentions of this Mission very soon involved it in difficulties with the Chinese, and within three months the larger part of the personnel was on its way back to Soviet territory. Kazanski himself with a small staff stayed on at the provincial capital, but as might have been expected, a man of his type was quite unable to cope with the Machiavellian old Governor, and in the summer of 1923 he was recalled. In September of the same year a somewhat better-qualified Mission was received by the Governor, headed by one Ozornin, formerly Envoy of the Far Eastern Republic at Peking. An interesting member of this Mission, which is still at Urumchi, is the Secretary, Hagelström, who was at one time dragoman of the Russian Consulate-General at Kashgar and has recently represented the Soviet Government at Harbin. This person is a remarkably proficient Chinese scholar and an able man altogether, but according to trustworthy non-Bolshevik sources he is at heart anything but a Communist and is playing for nothing but his own hand. The Ozornin Mission has made some progress in the negotiations with the Provincial Government and a draft agreement relating to Sinkiang has apparently been drawn up.

Bolsheviks in Ili.—The success of the Soviet in 1920 in securing representation at Kuldja and an informal Trade Agreement with regard to the fertile Ili valley and Chuguchak, though highly advantageous to them in so far as it went, has reacted unfavourably upon their prospects with respect to Sinkiang as a whole. After the manner of their kind, Epstein and Kolikoff at Kuldja set at once to work to abuse the unwilling hospitality of the Chinese. A "library" was started in the town which

quickly became a nocturnal rendezvous for "Young" Ili; many hundreds of Chinese subjects were enrolled in various Soviet secret societies; tribal chiefs of the Kazaks, Kalmaks and Taranchis were subsidized, and agents, including numerous women, were sent out into the districts to preach the blessings of communism, domestic emancipation and the New Islam. For a time some headway seems to have been made, and competent observers in 1921 and 1922 noticed signs of political fermentation, at any rate in the towns. But the Provincial Government was not so unobservant and supine as some foreign authorities had imagined, and they took the lesson of Ili at heart. The weak old Taoyin, Hsü, who had been responsible for the admission of the Russians into the province, was replaced by a more capable man; the Chinese garrisons at Kuldja, Chuguchak, Suidun and other strategic points were steadily increased and part of the profits accruing from the new trade with Soviet Turkestan were devoted to military preparations; large quantities of war material were first purchased, afterwards confiscated from Annenkoff's and Dutoff's interned White Guards, and a kind of militia was raised from the Kalmaks and trained after a fashion by the Chinese regulars. By various means, in fact, the Governor strengthened his position on the north-west frontier of Sinkiang, and Soviet penetration into what Russia has long regarded as rightfully part of her empire received a decisive check. In June 1924 the "library" in Kuldja city was closed; the Bolshevik colony being confined to the "Noghai Got" (Tartar Citadel), the European quarter outside the walls; any agents there may still be among the tribes conceal both their presence and the result of their efforts with remarkable success; the only soldiers of the Red Army in the country (so far as is known) are the twenty Cossacks of the Trade Commissioner's escort; while the Soviet representative himself has no extra-territorial rights or other means of interfering in the internal affairs of Ili, and is attended by an escort of sixteen Chinese regulars wherever he goes. He has in fact few opportunities of emerging from that state of "foreign guesthood" to which Chinese diplomacy invariably relegates the inconvenient European, whenever it feels itself strong enough to do so.

In the southern portion of the province, during the summers of 1920 to 1923, the frontiers at Irkeshtam and Sungek were periodically bombarded with grandiloquently-styled "Trade Delegations," "Expert Commissions" and so forth, usually

consisting of an illiterate and totally incompetent proletarian Communist accompanied by one or more slightly less incompetent "experts" of thinly-veiled bourgeois origin and sympathies. At first, in 1920 and 1921, the Chinese took these missions seriously, and on one occasion Chu Taoyin himself spent a month on the frontier parleying with one headed by the notorious Tigar and his associate Pechatnikoff. In 1922 and 1923 however no official notice was taken of any of the four or five missions that appeared. But the opportunities of "squeeze" afforded by a limited amount of trade were too good to be altogether missed, and a private arrangement was concluded with the secret approval of the Taoyin, Hsü, between the Ferghana "Gostorg" and the wealthiest of the Andijani merchants of Kashgar, Umar Akhun Bai, whereby the latter agreed to supply the Gostorg with a large quantity of raw wool at the high price of 15 gold roubles per pood. The wool, which was old and much deteriorated, was paid for partly by sterling bills amounting to £12,500 on Hankow, and partly by the export of sugar, iron, Baku oil and jewellery. Several small traders managed to do business under cover of Umar Akhun Bai's caravans, and a thin trickle of trade between Kashgar and Andijan by the Uzgend route (not *via* Irkeshtam and the Terek Pass, which route has been rendered unsafe by Basmachis ever since the Revolution) was thus carried on throughout the summer of 1923. An agreement was come to with the Governor in the summer of 1925 for the establishment of Soviet consulates at Urumchi and Kashgar, and Consuls-General appointed to these posts arrived in September 1925, each accompanied by a staff obviously larger than required for the legitimate consular duties of these posts. They have already done their best to cause trouble but up to the present have always found the Governor too much for them. Soviet consulates have been established at Chuguchak and Kuldja also and Chinese consuls have in turn been appointed at Tashkent, Andijan and Semipalatinsk. The latter, though nominally representatives of the Republic of China, are in fact selected by and responsible to the Governor at Urumchi. The Soviet consuls are, very wisely, prohibited from maintaining armed escorts.

The creation of republics in Soviet Turkestan, based on ethnological grounds, has probably only increased the Governor's fears regarding Russian penetration, as, if this system of republics were carried to its logical conclusion, parts of Kashgaria

would by ethnological rights be absorbed into Soviet Turkestan republics.

Russian Trade.—The magnitude of the Russian trade which, unlike the British, was comparatively free from the hindrances of physical obstacles, was a source of Russian power. Caravans were passing practically all the year round, backwards and forwards, between Kashgar, on the one side, and Osh and Naryn on the other. Literally thousands of people, and these principally Chinese subjects, were dependent on this traffic for their livelihood. True, merchants with a large capital were in a very small minority, but this fact, far from detracting from the stability of Russian trade, was really its chief element of strength, for the trade was not in the hands of a few capitalists ruling the market, but in those of a multitude of competing pedlars, who, because they sought from it, not a fortune, but a bare subsistence, sold their goods at the lowest possible rates. Russian money readily circulated in all the towns of Kashgaria, and the rouble and not Chinese silver, became the standard of value in all transactions connected with Russian commerce.

Of recent years, Russia had shown great activity in encouraging inhabitants of the country to enrol themselves as Russian subjects. Certificates of Russian nationality were issued in large numbers by *aksakals*, or native consular subordinates, often on the flimsiest grounds. This had a serious effect in hampering the action of Chinese officials, as all these so-called Russian subjects were able to appeal to their Consul for assistance and protection, which was only too readily given. Several unfortunate incidents between the Chinese and these so-called Russian subjects occurred, the most important being the Chira case, a riot, which occurred over this question, and in which several of these so-called Russian subjects were killed. The Russians demanded reparation, and it was only after prolonged negotiations that a settlement, in the nature of a compromise, was effected.

In spite of the extent of Russian influence, there is little doubt that the haughty attitude of Russian officials in the country tended greatly to make them unpopular, both with the Chinese officials and with the bulk of the population. There seemed to be a tendency, too, on the part of the Russian officials, by magnifying dangers and troubles, to make the necessity of intervention in internal affairs appear greater.

Soviet Russia has now (1928), as stated above, consular representatives at Urumchi, Kashgar, Chuguchak, and Kuldja and trade with Soviet Turkestan is showing signs of revival.

Relations with Great Britain and India.—Formerly, British interests were only represented in Sinkiang by an officer at Kashgar designated "Special Assistant for Chinese Affairs to the Resident in Kashmir." Both for the maintenance of British prestige and for the protection of British interests it became necessary that this officer should be given the status of a consul; for not only was he without political and judicial powers, but he was unrecognised by the Russians. A consul (Mr. Macartney), therefore, was appointed in 1904, but the Chinese Government, owing, it is thought, to secret opposition on the part of Russia, did not recognize the appointment. In 1907, however, the title was tacitly accepted by them and was officially recognised in June 1908. This appointment caused general satisfaction both to Chinese and Mohammedans. British prestige rose, and there was a marked difference in the settlement of cases in which British interests were concerned.

In 1909, the status of the Russian representative was raised to that of Consul-General, and it was thought expedient to give a similar rank to the British representative. In 1911, therefore, Mr. Macartney was appointed Consul-General. The British representative's position, though greatly improved, was still a difficult one owing to the lack of an escort. This compared unfavourably with the position of the Russian Consul-General, who was able, if necessary, to enforce his demands by a show of force.

The British Consul-General is represented by Aksakals, or native consular subordinates, in all the large provincial towns.

British interests, owing to the difficulty of the passes and the consequent unimportance of the trade, are small compared with those of Russia. Britain is, however, compelled to take a fairly large political interest in a province lying directly on her frontier, and in part of which, indeed, a British dependent chief (the Mir of Hunza) has rights of long standing. These interests are referred to below. The importance of the country from the British point of view is also increased by the fact of its being conterminous with Tibet, and any great change of the status of Sinkiang is bound to react on our position in Tibet.

In order to protect British Indian subjects, and to prevent them from seeking refuge by enrolling themselves as Russian subjects, it was decided to register and issue certificates of nationality to all British subjects. This is being carried out in a moderate and careful way and certificates are only issued on most carefully considered grounds by the British Consul-General himself.

In spite of the smallness of our trade in the country, there is little doubt that British prestige stands high, both with Chinese officials and with the populace. The Chinese officials undoubtedly have a strong regard for British advice and British justice, as they seem fully to realise that Britain has no axe of her own to grind in the country, notwithstanding the violent anti-British movement which has been so marked a feature in the recent history of China Proper.

Relations with Afghanistan.—Following the despatch by the Governor of Sinkiang of a Mission to Kabul in the summer of 1922, an Afghan mission headed by Mohammed Sharif Khan, formerly a minor official of the Amir's Court, came to Yarkand in the November of the same year. There appears to have been some misunderstanding, wilful or otherwise, on the part of the Afghans as to the status of the head of the Mission which the Chinese had agreed to receive; Mohammed Sharif brought with him printed visiting cards on which he described himself as "Afghan Consul-General in Sinkiang" a designation with which the Afghan community at Yarkand greeted him joyfully. The Governor of Sinkiang, however, represented by the able Chu, ex-Taoyin of Kashgar, absolutely refused to regard Mohammed Sharif and his party as anything but a Mission sent to negotiate a local Trade Agreement between Afghanistan and Sinkiang-Mohammed Sharif refusing equally resolutely to treat with the Chinese in any other capacity, the commencement of negotiations was delayed for several months pending references to Kabul and Urumchi. In the spring of 1923, the Afghan Government having apparently climbed down as regards the immediate recognition of their envoy as a consular officer, negotiations began in earnest. It very soon appeared, however, that the Afghan Government had an altogether exaggerated idea of its importance in the eyes of the Chinese and of the desire of the latter to ally themselves with Kabul; for the draft agreement presented by Mohammed Sharif to ex-Taoyin Chu embodied in effect demands not only

for all the extraterritorial and other privileges enjoyed by the most-favoured nation in Sinkiang, but various other privileges also, such as the appointment of special Afghan Qazis in Yarkand and elsewhere for the trial of mixed cases by Mohammedan law, and permission to import opium freely into China. The Chinese, who are determined not to conclude any more treaties with anyone, naturally refused to grant treaty rights to Afghanistan, and the negotiations again broke down. At the end of 1926 the situation was that the Afghans still demanded the recognition of Mohammed Sharif as consul and the grant by the Chinese of extraterritorial and other rights with respect to Afghan subjects in Sinkiang, while the Chinese refused to recognise Mohammad Sharif as anything more than a Trade Agent, on the lines of the Soviet representative at Kuldja.

It is difficult to say what were the motives which underlay the action of the Sinkiang Government in sending a Mission to Kabul in 1922. The idea of a Sino-Afghan *rapprochement* appears to have originated with Mahendra Pratap, the Indian seditionist, who was despatched by the Afghan Government at the head of a well-found Mission to China *via* Sarikol in 1920 and again in 1921, but was on both occasions refused admission to Chinese territory. Possibly the Chinese thought that an Afghan Mission would act as a makeweight to the British Consulate-General, against whom they would be able to play the Afghans off in the same way in which they used to try to play the British and the Russian Consulates-General off against each other in the days before the Russian débâcle. Whatever may have been their motive, there is no doubt that the Sinkiang Government now regret having allowed the Afghans a footing in the province. From the outset Mohammad Sharif has "played to the gallery" of Moslem Yarkand, and has lost few opportunities of spreading Pan-Islamic ideas both in public and in private. Apart from this he and his Government have not been unduly troubled with scruples regarding international usage in their methods of raising money for the financing of their "Consulate-General." For several months after his arrival Mohammad Sharif charged fees for the issue of passports and visas to Afghan and non-Afghan nationals respectively, a particularly lucrative source of income being the expensive visas issued by him for the transit of the Wakhan, the small strip of Afghan territory between the Wakhjir and the Baroghil Passes on the Chitral route to India. This practice was eventually discontinued as a result of strong representations by the

Chinese. A more serious breach of international usage was committed by the Afghan Government in the late autumn of 1923 when they ran a heavy consignment of opium through from Badakhshan *viâ* the Russian Pamirs, Sariqol, and the Kizil Tagh to Yarkand. Between 60 and 100 armed Badakhshis who accompanied this caravan beat off the Chinese frontier guards and Kirghiz in Chinese employ who tried to stop them, and smuggled the opium into Yarkand by night. Bills to the value of Kabuli rupees 40,000 were shortly afterwards cashed by the Afghan Agent on certain Badakhshi traders in Yarkand, obviously from the sale proceeds of the opium. Although this is the only definite instance which has come to the ears of H. M.'s Consul-General, it is a matter of common knowledge that practically the whole of the current expenses of the Afghan "Consulate-General" including heavy expenditure on entertainments, presents, etc., are financed by the export of opium to Yarkand in flagrant disregard of Chinese law and the express protests of the Governor's representatives. This question of opium traffic is as a matter of fact one of the chief obstacles in the way of a Sino-Afghan settlement. Nine-tenths of the Afghan subjects in Sinkiang are engaged in it, and they clamour for "free trade in opium" with no uncertain voice. It is the boast of the Governor of Sinkiang, on the other hand, that no opium is grown in this province, and although many of the local officials smoke it and many more share in the profits of the illicit trade, it is done against the express orders and without the knowledge of the Urumchi Government.

3. *The Mir of Hunza's Rights in the Taghdumbash Pamir and Raskam Valley.*

Hunza, prior to its annexation by the British in 1891, held control over certain regions on the northern borders of the Hindu Kush and the Mustagh mountains. No regular government was established over this tract, but the power of the Mir of Hunza was sufficient to place the inhabitants under contribution, which was levied in the form of grazing fees. This levy has not only been sanctioned by long usage but was officially recognised by the Chinese authorities in Sinkiang, and is still continued.

About 1880, owing to a difficulty in collecting these dues, a commission was appointed by the Mir to determine the limits of this tract, and the result was approved by the Chinese autho-

rities. Since then grazing fees have been levied without opposition or difficulty, except in a few cases when objections were offered on account of alleged Russian nationality. These claims to exemption, however, have not been allowed. In 1913, two recalcitrant Russian subjects on the Taghdumbash Pamir paid the fees, by order of the Russian Consul-General at Kashgar.

The limits of the regions over which these rights are exercised may be roughly described as follows. All the inhabited country abutting, on its western and southern borders, on the Mustagh and Sariqol ranges, as far north as a line drawn through Sirigh Tash and Irik Jilga (on either side of the Tash Kurghan stream, 5 miles north of Dafdar) to Ak Masjid (approx. latitude $37^{\circ}10'$ and longitude $77^{\circ}4'$). The eastern and western limits have not been accurately determined, but the region may be said to comprise the Karachukar, Khunjerab, Oprang and Raskam valleys with their smaller feeders.

These rights were supplemented in 1899 by a lease, from the Chinese Government to the Mir of Hunza, of cultivation rights in the Raskam valley, but of late years the Chinese have been trying to evict the Hunza cultivator, and in September 1923, the Taotai of Kashgar wrote officially to the Mir accusing him of trespass. The Hunza cultivators are, however, still in possession and it is very doubtful whether any serious attempts can or will be made to evict them.

No objection has been raised to the Mir's collection of grazing fees in the Taghdumbash Pamir and the Chinese officials assisted the Mir's agent in this collection during the summer of 1925.

The Mir of Hunza, although a British subject, pays annually a nominal tribute to China. This is very small and leads to no friction with the Chinese, but, should the province ever fall into the hands of Russia, might be developed into a political weapon of some danger. The Chinese authorities in Kashgar are apt to describe Hunza as a country "under the joint protection of China and Great Britain." The "present," or "tribute of gold," which the Mir of Hunza yearly sends to the Taoyin of Kashgar, is still regarded by the Chinese as tantamount to an admission that Hunza is under Chinese protection, though the Chinese are probably prepared to admit that Hunza is also under British protection.

APPENDIX "A."

EXCHANGE SITUATION IN MAY 1923.

(a) *With India.*—The export of silver being forbidden by the Chinese and gold not being available in sufficient quantities, the import trade has to be financed almost entirely by the export of commodities such as *charas*, silk, felts, etc. The exchange value of the rupee depends, therefore, upon the amounts of the above commodities actually available for export from time to time and on the possibility of transporting it at economic rates over the exceedingly long, difficult and dangerous Karakoram route. The result is that the rupee fluctuates between 6 and 7 tengas, as against a value, calculated according to the Bombay-Shanghai and Shanghai-Kashgar exchange of more than 8 tengas.

(b) *With China Proper.*—For similar reasons the only method of remitting to China Proper, other than through the Post Office, is by exporting the few commodities which command a high enough price in China to pay for the cost of 3,000 miles of road transport. The remittance of money to China Proper is therefore a difficult and costly business and drafts on China are at a premium. The normal Post Office rate for money orders is $117\frac{1}{2}$ Kashgar taels = 100 dollars; only rarely do ordinary mercantile bills come into the market.

(c) *With Urumchi.*—The Urumchi or "Kuompiao" tael fluctuates wildly in the Kashgar market, and has varied during the last six months between 200 and 350 per 100 Kashgar taels. At present it is at a discount and the traffic in "kuompiao" has been stopped by the Chinese authorities in Kashgar. The Urumchi Government carefully keeps up the fiction that the "kuompiao" tael is equivalent to the Mexican dollar, but, owing to the inflation and to the steady drain of silver to the coast, the Urumchi currency is steadily depreciating.

There is no more metallic reserve behind the Kashgar note-issue than there is behind that of Urumchi, but inflation has been kept within bounds, while the export trade creates a demand for the currency with the result that silver has during the last three years gone completely out of circulation, whilst the local paper tael is still worth 75 per cent. of its face value.

We have here, in fact, the surprising economic phenomenon of a paper currency unsupported by any reserve, a currency which no one ever dreams of trying to exchange at the Government treasury for coin, still commanding the confidence of the public and acting as a perfectly efficient and reasonable medium of exchange. This Arcadian state of affairs could only exist of course in an isolated and practically self-supporting country in which education and commercial enterprise are alike in a primitive stage; it depends on the confidence of the people in the stability of the existing regime, any serious disturbance of which would almost certainly result in a slump.

APPENDIX "B."

NOTE ON THE SPELLING OF PLACE-NAMES IN SINKIANG.

(*J. H. Reynolds, Secretary, P. C. G. N.*)

In making its decisions, the Permanent Committee on Geographical Names is confronted with varying degrees of difficulty some countries giving very much more trouble than others. At a recent meeting the Committee tackled an unusually complicated problem when it considered the general principles to be followed in rendering place-names in Sinkiang. This great territory in the west of the Chinese dominions is better known as Chinese Turkestan, a name which gives some indication of the difficulties in nomenclature; for here there is on the one hand an official language, Chinese, with a series of names practically never used in ordinary life within the territory itself, and on the other a native language, Turki, with another series of names, many of which are not recognized officially at Peking. When it is considered that Chinese is written in an elaborate system of ideographs, the best romanization of which is in dispute, and that Turki employs the Arabic alphabet (of which, indeed, the same may be said), but having little or no literature of its own, in the eastern region at all events, is by no means certain about its orthography, and, further, that the Chinese have made gallant but unsatisfactory attempts to transcribe some Turki names into their own limited syllabary, it will be seen that to say exactly how we should spell a place-name in Sinkiang is by no means an easy matter. We may disregard the usual additional variants originating from Russian maps and German atlases.

At its inception in 1919 the P. C. G. N. passed a provisional Resolution "that the spelling of the Chinese Postal Guide be adopted for all names which occur in it." This meant that the Wade system of rendering Chinese, followed by most scholars, was discarded and the official romanization of the Postal Guide with all its inconsistencies was preferred to it, on the principle that a ready-made list of names, officially recognized, should be adopted wherever possible.

For purely Chinese names and within the limits of China proper the Postal Guide spellings, though displeasing to scholars

have an obvious advantage. But it is in the rendering of non-Chinese names, Mongol and Tungus, Tibetan and Turki, that the Postal Guide leads us into trouble. Let us consider how it deals with place-names in Sinkiang (*Wade*, Hsin-Chiang).

(a) In many cases, the Postal Guide gives the Chinese name alone. This applies to most small places, and it is not always easy to identify Chinese post offices with Turki villages, *e.g.*, Are Luntai (east of Kucha) and Shanshan (east of Turfan), as shown in the somewhat diagrammatic Postal Atlas of China identical with the Bugur and Pichan of the Survey of India maps? There are, however, some important names among them; and these may be divided into two classes: (1) those where an attempt has been made to render the Turki names in a Chinese form, as:—

Chinese.		Turki.
Wade.	Postal Guide.	
Ha-la-ha-shih .	Halahashih .	Qaraqash.
K'u-ch'e . . .	Kuche . . .	Kucha.
K'u-êrh-lê . . .	Kuerhlei . . .	Kurla.
Pai-ch-êng . . .	Paicheng . . .	Bai.
Sha-ya	Shaya	Shahyar.
Ta-pan-ch'êng .	Tapancheng .	Daban Ching.
T'o-k'ê-sun . . .	Tokosun . . .	Toqsun.

and (2) those where the Chinese name is quite different from the Turki, as :—

Wade.	Postal Guide.	Turki.
Chên-hsi . . .	Chensi . . .	Barkol.
Ha-mi . . .	Hami . . .	Qomul.
Hui-yuan . . .	Hweiyuan . . .	Ili.
Shu-lê . . .	Shuleh . . .	Yangi Shahr.
Hsin-p'ing . . .	Sinping . . .	Qara Qum (Yangi Shahr).
Ts'ê-lê-ts'un . . .	Tsehletsun . . .	Chira.
Wên-su-lao-ch'êng . . .	Wensuhlaocheng . . .	Aqsu (Kohna Shahr).
Wu-shih . . .	Wushih . . .	Uch Turfan.
Yü-t'ien . . .	Yütien . . .	Keriya.

It is possible that the Chinese Tapancheng may be the original name and Daban Ching a Turki rendering of it; Ch'eng is Chinese for "walled town," but daban or davan is a regular Turki word meaning a pass. Ts'e-le (-ts'un) may represent Chira. Laocheng in Wensuhlaocheng is a translation of the Turki Kohna Shahr, both meaning old town.

(b) For most of the important towns the Postal Guide gives the Turki (or Mongol) name as an alternative in brackets, as :—

Wade.	Postal Guide.
Ho-t'ien	Hotien (Khotan).
Pa-ch'u	Pachu (Maralbashi).
P'i-shan	Pishan (Guma).
So-ch'ê	Soche (Yarkand).
Sui-lai	Suilai (Manass).

But in many cases the non-Chinese name is incorrectly spelt quite apart from the question, to be considered later, whether the letter Q should be used, as :—

Wade.	Postal Guide.	Turki or Mongol.
Ho-êrh-kuo-ssu	Ho e r h k w o s z e (Gorgos).	Khorgos.
Ning-yüan	N i n g y u a n (Kuldja).	Qulja.
P'u-li	Puli (Sailikal) .	Saidiqol.*
Shu-fu	Shufu (Kashgar)	Kashghar or Kashqar.
Ti-hua	Tihwa (Uru- mtsi).	Urunchi.
Wen-su	Wensuh (Aksu)	Aqsu (Yangi Shahr).
Yeh-ch'êng	Y e h c h e n g (Kgilik).	Qarghaliq.
Yen-ch'i	Yenki (Kara- shar).	Qara Shahr.

* Perhaps Sarighqol or Sariqol, a rather wide district to name a post office after; the Postal Atlas marks Puli on the Tash Qurghan river about the spot where the small Saidiqol Jilgha comes in from the east.

In the case of Yangihissar (Yingkisha) (*Wade*, Ying-chi-sha) the Postal Guide puts the Turki first, while in that of Turfan it omits the romanized Chinese Tulufan (*Wade*, T'u-lu-fan).

In Kiashi (Paitzepa) [*Wade*, Chia-shih (P'ai-tzū-pa)] both names are actually Chinese; but Paitzepa is evidently merely a Chinese attempt to transcribe the Turki (strictly Arabic-Persian) Faizabad. In Kitai (Kuchengtze) [*Wade*, Ch'i-t'ai (Ku-ch'êng-tzū)] again both names are Chinese, the name Kitai being appa-

rently taken from the place Ch'i-t'ai-hsien now called Laokitai (*Wade*, Lao-ch'i-t'ai), *i.e.*, Old Kitai, in the Postal Guide. Parenthetically it may be noted that the form Guchen often found on maps is the Russian rendering of Kucheng, the Russians generally writing hard *n* for final *ng* and soft *n* for final *n* in Chinese syllables.

It is obvious that such incorrect spellings as the Postal Guide's Kagilik and Sailikal cannot be adopted; and, even if Kashgar and possibly Kuldja are allowed to stand as established by convention, we can hardly retain Karashar and Urumtsi, which found their way into the Second General List of Asiatic Names in consequence of the P. C. G. N.'s Resolution of 1919 mentioned above. After considering the whole question, the Committee has decided to follow in general the spellings of the Chinese Postal Guide, except for non-Chinese names unsuccessfully transliterated therein and to adopt for Turki, etc., names correct spelling, with the romanized Chinese form when and as given in the Postal Guide added in brackets. There are, of course, a great number of small places, not to mention all rivers, mountains, etc., which do not occur in the Postal Guide, and therefore must bear their native names alone.

It thus becomes necessary to determine the most suitable transliteration of the Arabic alphabet as used for Turki. Although in this language certain pairs of consonants are interchangeable so that we may find, for instance, the word for a hill written either Debe or Tepe, and although there may often be some uncertainty and variety in the sounds of the vowels, there is really only one matter in serious dispute, and that is the sound and rendering of the letter which the P. C. G. N. some years ago determined after much consideration to transliterate Q in the Arabic language, and similarly treats it in Persian and Osmanli Turkish, on the ground that as pronounced by these peoples it has a sound quite distinct from the ordinary K. Let us see what the authorities on Turki have to say about it.

One of the first Europeans to write about the Turki language, Hermann Vambéry, in "Cagataische Sprachstudien" (Leipzig, 1867), uses K̇ (K with a dot beneath it) for the letter rendered Q by P. C. G. N. in Arabic, Persian, and Osmanli Turkish, and says that it "ist überall ein starker Kehllaut, und zwar je östlicher wir vordringen, desto rauher treffen wir ihn an. In Chiva gleicht er dem arabisch-persischen Kaf, in chinesischen Tatarei klingt er als ein scharfes CH" (*i.e.*, KH).

Probably the best-known work on Turki is R. B. Shaw's 'Sketch of the Turki Language.' He also used K in Part I, published at Lahore in 1875; but when this was reprinted in the *Journal of the Asiatic Society of Bengal*, 1877, and Part II, the Vocabulary, was published as an extra number in 1880, the letter Q (and not K) was used throughout. In his Grammar (p. 4) he says that this letter is "pronounced far back in the throat with a kind of choking effort. The Yarkand pronunciation of it is rougher than that of the Persians. Sometimes interchangeable with GH." It is noteworthy that in the pairs of interchangeable letters K (Q) is coupled with GH, and "ordinary K" with "ordinary G." There is a good example of the interchange of Q and GH in his Vocabulary (p. 164), where he gives both Kashgar, "the spelling usual among the Western Turkistanis, and which has now been adopted in the coinage of the reigning Amir," and Kashqar, "the spelling used by the natives of the country both in their everyday transactions and also in their books." It is true that Q and K are interchangeable in affixes like the adjectival-liq,-lik (Vocabulary, p. 180), "which takes various forms according to the letters, the word to which it is affixed." But Shaw evidently meant that this change was according to rule and was accompanied by change of pronunciation "Thus (Part I, p. 84) if the throat has been put into the half-choking state necessary to pronounce the ghain or the kaf and another guttural comes immediately afterwards, it is difficult to prevent this being sounded with the same choking effort.... Thus gutturals of either class, which may be roughly designated as common, K and G, and true (choking) K and GH, when contained in root, tend to bring any guttural contained in an affix into the same class." There would therefore be no inconsistency in writing Qarghaliq and Tikenlik.

In his "Eastern Turki Grammar," published in English in *Mitteilungen des Seminars für Orientalische Sprachen*, 1912, pp. 111-183 and 1913, pp. 113-211, G. Raquette, who states that he "lived as a missionary in the country for nearly thirteen years and always kept an ear open for the phonetics of the language," uses Q throughout, remarking that "Q would evidently be the proper sign for the guttural K sound." He admits that "it is a well-known fact that two people seldom hear alike, especially if they are of different nationality.

Raquette was assisted by Dr. A von Le Coq who, in addition to his own "Volkskundliches aus Ost-Turkistan" (1916) and "A Short Account of the First Royal Prussian Expedition to Turfan in the *Journal of the Royal Asiatic Society*, 1909, pp. 299—322, contributed largely to Sven Hedin's "Southern Tibet" (1922). He invariably uses Q, and ('Southern Tibet,' 9, p. 92) describes this letter as "tief in der Kehle hervorge-brachter K laut."

Dr. K. B. Wiklund, in Sven Hedin's 'Central Asia,' 2, p. 655, says, "In addition to the usual K there occurs also in Turkish, and in Semitic and other languages, a deeper or velar K, which is often written Q in both philological and geographical works. This sound occurs also in the Turkish dialects of Central Asia, and for philological reasons it would be interesting to have a special sign to indicate it, and write, for example, Qizil= "red," an orthography which cannot very well be either ambiguous or misleading, though perhaps the distinction may appear to many to be too refined. But as Dr. Hedin in making his observations did not discriminate between Q and K, I was of course unable to carry out the differentiation."

F. Grenard, in vol. 3 of Dutreuil de Rhins' 'La Haute Asie,' 1898, also makes no distinction between the two letters in his List of "Termes Geographiques," but he recognises a difference in the "Linguistique" part of the volume, where he uses italic K in order "de distinguer dans les noms turcs le K guttural du K ordinaire." He remarks (p. 61), "En comparaison de la Prononciation du Turkestan russe, celle de Khotan et de Kéria est dure, Hachée, gutturale à l'extrême."

Sir Aurel Stein, however, uses K indiscriminately, and says ('Mémor on Maps of Chinese Turkistan and Kansu,' p. 62), "In recording Turki and Iranian names I have followed the system of transliteration approved by the International Congress of Orientalists and used also, in its simplified Hunterian form, for Indian Government Publications.....No distinction has been made in the case of words derived from Arabic between the several kinds of sibilants, gutturals, etc., which are pronounced alike by the people of Chinese Turkestan."

The Royal Asiatic Society, in its 'Report on Transliteration' states that its "system is almost identical with that approved of by the International Oriental Congress held at Geneva in 1894;" and in the Geneva Transliteration Table for Arabic and Allied Alphabets the letter Q is used. No special mention is made

of Turki (though peculiarities in Persian, Hindi, Pushtu, and Turkish are noticed), and in Dr. A. von Le Coq's article (J. R. A. S., 1909, p. 299) mentioned above, Q is used in the Turki names.

Even if the gutturals in question were "pronounced alike by the people of Chinese Turkestan," a distinction in writing would be useful to distinguish readily such words as Kol (= lake) and Qol (= valley), or the termination kand (= town) as in Yarkand and qand as in Samarqand, a pre-Turk name.

Further, it may be remarked that Turki is closely akin to Osmanli Turkish, many words being identical; is it desirable that the words for "white" and "black," for example, should be rendered Aq and Qara in Osmanli, but Ak and Kara in Turki, and, if so, where is the border-line?

Having considered the matter in all its aspects the Committee, who had the advantage of Sir Aurel Stein's valuable assistance, finally decided that, when it is possible by written evidence or philological analogy to be certain of the occurrence of the letter transliterated Q in Arabic names by P. C. G. N., that letter should be so written in rendering Turki names. Thus we shall write Charkhliq, Qarghaliq, Qomul, Toqsun, and Aqsu (white water), Bash Qurghan (head fort), Qara Qash (black jade) Qum Quduq (sand well), Qungur (dun), Quruq Tagh (dry mountain), Taushqan (hare), etc., and we can be equally certain that Q should not be used in Keriya, Kohna Shahr, Kucha, Kurla, Tikenlik, Yarkand, etc., but with regard to a name like Domoko, we must keep the K in the absence of evidence to the contrary. (Is it possible that this last word is Tibetan?) There are many names of small places all over the world, where short of visiting the actual spot, it is almost impossible to lay down the exact spelling and pronunciation.

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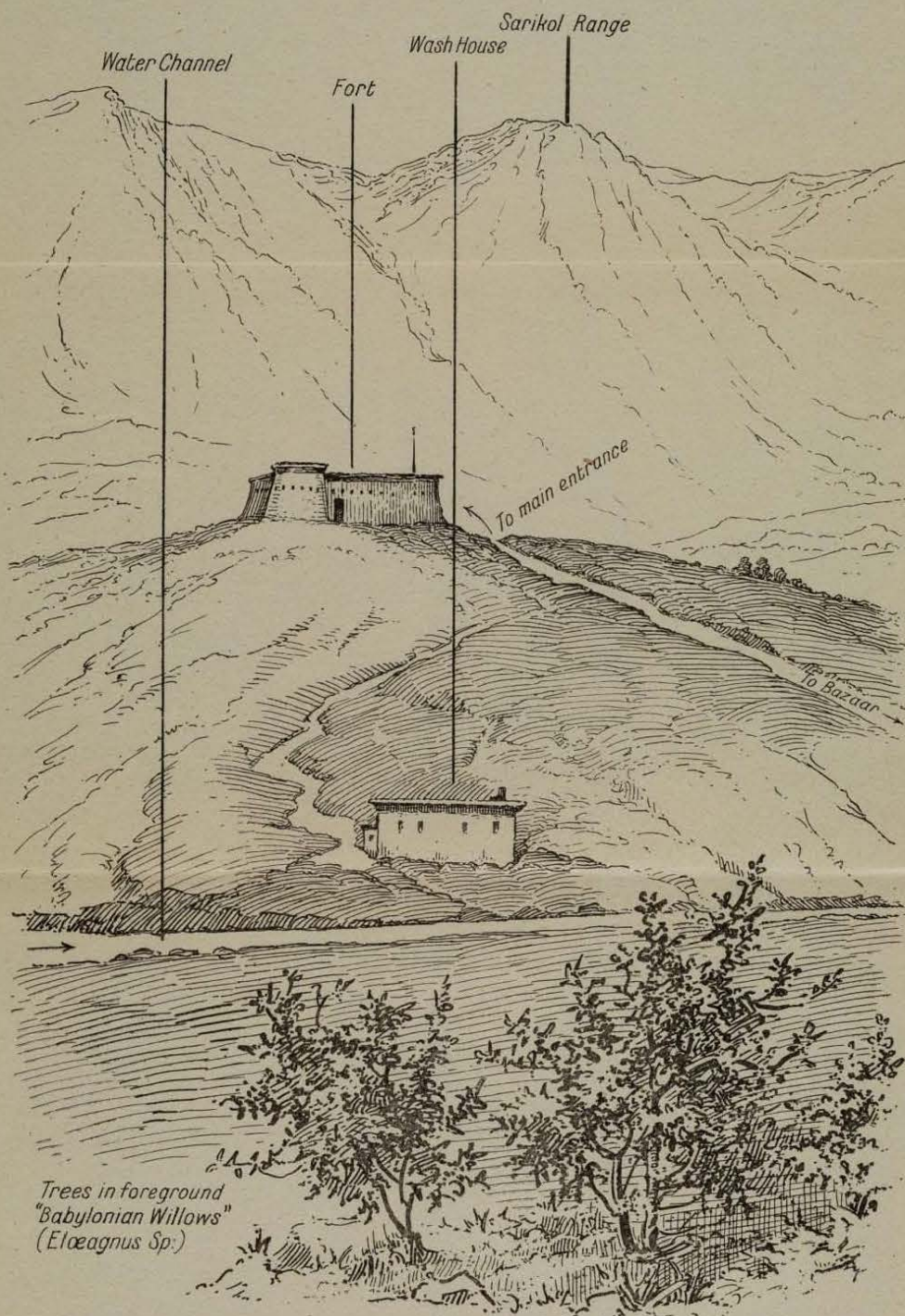
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The Russian Post at Tashkurghan.
from the Tashkurghan Stream looking W.



From a Sketch by Capt. A. Shuttleworth.
 June 1908.